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ABSTRACT

The Vocational Teacher Education Project (VTEP) was a 4-year project designed to create a dynamic vocational teacher education model for use in vocational teacher education programs throughout Florida. The knowledge base requirements for effective teaching and Florida's vocational teaching education delivery models were reviewed. A VTEP model was then developed based on input from the following sources: project advisory committee members, local and state school district vocational education leaders; and reviews of literature and pertinent research reports. The VTEP model developed is a holistic model for planning vocational teacher education that employs partnerships and collaborative working relationships to equip vocational teacher education students with necessary how-to-teach competencies and link vocational teacher education with local vocational education programs. (The bibliography lists 31 references. Appendixes constituting approximately 60% of this document contain the following: advisory committee representation matrix and committee members list; Performance-Based Teacher Education/Competency-Based Staff Development professional competencies survey instrument; Vocational Education Needs Assessment and Planning teacher competencies; data tables from survey analysis; survey comments; VTEP/blueprint/Secretary's Commission on Achieving Necessary Skills comparisons; and the 48-page report "Vocational Teacher Education: A Context for the Future" (Richard L. Lynch, Mildred B. Griggs), which contains 37 references.) (MN)

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CNAP Research Report

Final Report

Vocational Teacher Education Project

June 1989 - June 1993

Prepared for

The Division of Vocational, Adult, and Community Education

Florida Department of Education

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Project Director

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The Learning Systems Institute
The Florida State University

August 1993

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FINAL REPORT
VOCATIONAL TEACHER EDUCATION PROJECT

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I. EXECUTIVE SUMMARY

The Division of Vocational, Adult and Community Education in the Florida Department of Education in July, 1989 initiated a four year project with the Center for Needs Assessment and Planning at Florida State University to examine the preparation of vocational teachers in Florida.[1]

The Vocational Teacher Education Project (VTEP) was designed to create a dynamic vocational teacher education model that produces quality vocational education teachers, who, in turn, produce competent, confident, self-sufficient vocational education completers. These completers go on to enter America's workforce or continue in post-secondary training. The VTEP model incorporates the development of specifications for planning, implementing and evaluating a vocational teacher education preparation curriculum, as well as a process for the continual updating and revision of the curriculum in response to the changes and demands of society and vocational education.

During the initial stages of the project, several things were done for the purpose of assuring transfer of ownership of the project to vocational educators and other specific educational leaders and decision makers at the state and local level.

- Obtained input from school district and community college administrators, area vocational technical center staff and administrators and staff in the Department of Education.
- Project staff met with vocational teacher education faculty at each of the eight state universities offering vocational teacher education. The purpose of these meetings was to explain the project, learn about faculty problems and concerns, and encourage their continued input and involvement.
- Formed a project advisory committee made up of representatives of the stakeholder groups in the state vocational education system.

Using input from the project advisory committee, local and state vocational education leaders, reviews of literature and research reports, two major concerns were identified that significantly impact vocational teacher education.

- Vocational teacher education students are not adequately prepared with the required "how to teach" competencies.

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[1]Funds were received each year of the project from the DVACE. However, in 1991-1992, the level of funds from DVACE was reduced as a result of the new federal vocational education legislation which changed the funding allocation process. The short-fall of funds for 1991-1992 was picked up by the Orange County School District and the Sarasota County School District. Without this support, the first two years of this effort would have been lost.

- There is a general failure to productively link vocational teacher education with local vocational education programs and what goes on in local schools.

In response to these major concerns, the project:

- examined the **knowledge base** requirements for effective teaching.
- developed and field validated a set of **professional instructional goals and learner competencies** for effective teachers.
- described a **holistic model** for planning vocational teacher education which employs **partnerships and collaborative working relationships**.
- reviewed Florida's vocational teaching education delivery models and made recommendations for reform and restructuring.
- made recommendations for and described the benefits of the enhancement and reform of how vocational education, including vocational teacher education, is planned, delivered and evaluated in Florida.

It is strongly suggested that any serious commitment to reform and restructure Florida Vocational Education, including vocational teacher education, include a detailed study of at least the following references in addition to this report.

- *Florida's Vocational Education System: Toward the Year 2000* (Florida Commission on Vocational Education, 1986)
- *Vocational Teacher Education: A Context for the Future* (Lynch and Griggs, 1989)
- *Better Teachers for Our Nation's Schools* (Goodlad, 1990)

In addition, continued strategic planning for vocational education, focusing on Florida's return on investment and a continuous improvement process, should be undertaken.

II. INTRODUCTION

We are all rapidly moving toward the 21st century. No longer can first-rank societies expect to exist in an age where the old antiquo of "if it works, don't fix it" applies. The information age is squarely upon us and we must take a proactive stance instead of a reactive one if we wish to remain self-sufficient and productive. Vocational education must make a contribution to our collective success, now and in the future.

Anyone casually scanning newspapers today can read about how our whole world is changing in leaps and bounds. Ten years ago, many of the current political and technological skills probably would have been addressed in some science fiction magazine. However, shifts in frames of reference for understanding the world and its events are a reality. Business and industry, and the consciences of the general population, focus more and more on the societal events... to create a better world both today and tomorrow.

Florida, with its rich human and natural resources, cannot idly wring its hands and wonder what to do next. We can react to change and be its victims, or we can create positive change and help create the kind of world in which we want our children and grandchildren to live. Resting on the realities of yesterday and today will not suffice. Global competition is forcing Florida's agriculture, manufacturing, and service industries to enhance productivity and develop higher value-added products and services. Vocational trades are just one of the major groups affected by these changes -- and, they will continue to be affected well into the 21st century.

The Florida Commission on Vocational Education noted that vocational education plays an integral role in Florida's economic development and well-being. The Commission's report, *Florida's Vocational Education System: Toward the Year 2000* (1986), pointed to the responsibility that vocational education has to produce a "well trained workforce in sufficient numbers to meet the (requirements) of the economy." The report indicated that production of a competent, successful workforce requires integrated, cooperative planning between all providers of vocational education; *i.e.* high schools, community colleges and vocational-technical centers, as well as those employing vocational education completers. It also emphasized that "The State Department of Education and local school systems must enlist the cooperation and assistance of business, industry and government in designing and implementing career education programs." (p. 56). This planning must assure that schools "integrate academic and vocational education for every student preparing or retraining for our changing occupations." (p. 5).

The Florida Commission on Vocational Education report also identified the critical role professional vocational-technical teachers play in helping Floridians develop competencies that allow them to meet current and future vocational, social, technological and economic challenges. However, the report indicated that some vocational teachers do not have the pedagogical

skills required to deliver competency-based instructional programs and recommended the development of "a unified system that coordinates the local and teacher education agencies' efforts in assisting new teachers to be more effective." (p. 48).

Given the current speed of change, is Florida ready for positive societal changes? More importantly, can vocational education in Florida keep up-to-date with the new technologies and methodologies at hand? *Workforce 2000 : Choices for Florida's future* (Florida Department of Labor and Employment Security, 1990) reports, "In a world as driven by change as ours, not making proactive decisions about the course of our future is every bit as much a choice of a vision for that future as if we had planned it in great detail. Everything is moving on around us, and clinging to yesterdays's solutions as tomorrow becomes today dooms us to a lackluster lifestyle well behind that of other industrialized nations."

Eventually, these tremors of change will affect vocational teachers who will prepare the future workers. Poole and Zahn (1989) reported that "In 1986, after a two year study of how education affects the economy, and vice versa, the Council of Chief State School Officers stated in a briefing book that while experts disagree on the rate and extent of oncoming changes:

- Continual change in the economy is certain;
- International competition is causing profound, continuing changes in the nature of work and the skills required to do it;
- The rapid application of technologies, driven by international competition, will continue to have uncertain but significant effects on the skills required for working;
- Our nation will remain competitive in the world economy only through increased productivity resulting from a highly trained and adaptable workforce;
- Since technology is universally and instantaneously transportable across national boundaries, the retention of our technological advantages is no longer assured;
- Fewer jobs will be available in manufacturing, and those jobs will require greater technical skills than manufacturing jobs required in the past; and
- The greatest growth in jobs will be in the service sector and those jobs will require greater technical skills than previously 'needed'.

Moreover, *The Cornerstone Report: Foundations for economic leadership* (Florida Chamber of Commerce, 1989) further states "Florida faces a number of challenges. It's current industrial structure and economic foundations are not yet adequate for meeting the competitive future ahead..." Florida's economy for the most part of this century has been agriculture, tourism, and construction. However, with the growth of Florida's population,[2]

[2]From 1980-85, six of the 11 fastest growing counties in the U.S. were in Florida.

it can no longer remain a productive state on just these economies. The report also notes:

> *A striking consequence (has been) Florida's reliance predominantly on attracting industry, retirees, and tourists for its economic growth....Florida has been experiencing rapid population growth, its economic structure has changed the past two decades from a resource-based economy to a more diversified economy driven by clusters of growing service and manufacturing industries....Emerging (industrial) clusters such as information services (computers, communications, electronics, and software industries) have grown very fast over the past decade and have greater potential as they begin to reach "critical mass." However, because of increasing international competition, industries in this cluster must constantly move toward higher-value added products and services to grow in the future.*

Based on these predictions, what will happen in the year 2000? Nancy Perry (1989) states, "According to the Bureau of Labor Statistics, jobs for technicians will grow 38% by the year 2000, faster than any other major occupational group." Currently, the perception of the preparation of vocational educators in Florida falls short in the necessary skills, knowledges, attitudes, and abilities unique to vocational education and its teachers. According to Hodgkinson (1988), "Florida should initiate a major independent review of the state's vocational education and technical training system....."

The Cornerstone Report (1989) reports that "Skilled human resources and accessible technology are critically important to Florida's emerging and expanding industries". Moreover, the new age workers must not only be skilled and competent in their area of training, but must also be able to grasp the 'big picture' and contribute to overall operation of the business. However, these two areas are where Florida has its greatest current competitive weakness. Harold Hodgkinson (1988) indicates that "The state's population clearly does not have the educational skills that may or may not be required if the high-tech predictions come true." The high-tech predictions that Hodgkinson refers to are:

- The immediate futures of the American economy are high end services, which Florida is moving towards
- Diversification, which is the key to economic success, has taken a hold in Florida
- Manufacturing has found Florida a haven because of almost non-existent taxes, cheap labor force, and lots of sunshine.
- Construction is the best prediction of future economic activities. Florida has this attribute.

From these reports, it is clear that Florida must redefine its goals and objectives and choose the appropriate means to achieve them. Consequently, Florida will require a better skilled and more responsive workforce. *The Cornerstone Report* (1989) confirms this, "Florida requires a skilled and

flexible workforce to meet competitive challenges. A high-quality workforce is especially important for attracting and growing high-value added industries..." Nancy Perry (1989) concurs, "...More and more (Business & Industry) are asking, 'How can we get workers trained before we hire them?' Vocational education offers a good solution." However, Florida, like the rest of America, is sorely lacking in the vocational education field. As *The National School Boards Association Report* (1989) states, "Continual improvement of education and re-evaluation of its priorities as national interest shifts must become permanent policies... It would be tragic if the (United States) is to lose the potential of outstanding careers in science or business because it is not willing to make the same investment in education... In the future, the basic wealth of a nation will depend less on goods produced or industrial holdings, and more on investment made in human resources."

For the decade leading to the new millennium, Naisbitt & Aburdene in *MEGATRENDS 2000* (1990) provide some useful megatrends for us to consider as we educate vocational teachers for the coming decades:

- The Booming Global Economy of the 1990's
- A Renaissance in the Arts
- The Emergence of Free-Market Socialism
- The Privatization of the Welfare State
- The Rise of the Pacific Rim
- The Decade of Women in Leadership
- The Age of Biology
- The Religious Revival of the New Millennium
- The Triumph of the Individual
- Global Lifestyles and Cultural Nationalism

Many state studies and reports document the supply and demand status of vocational teachers in Florida. These reports also raise the question, "how do we obtain and keep an adequate workforce of vocational teachers in Florida?"

As *The National School Boards Association Report* (1989) states, "Educational excellence in the United States cannot be accomplished without superior teachers. Many recent studies indicate an apparent decline in teacher supply as well as inadequate teacher preparation programs." If there are not enough vocational educators, many vocational programs will have to close or not begin.

According to *Trends in the Supply of New Teachers in Florida* (Florida Department of Education, 1992), it is estimated that Florida will require an average of 568 new vocational teachers each year between 1993 and 2001. For the 1993-1994 schoolyear, Florida is projected to have 124 new graduates in the vocational teaching field, compared with 546 projected vacancies. These data predict serious vocational teacher shortages in Florida. If the current trends continue, many vocational education programs will be eliminated due to the lack of qualified teachers. As *The National School Boards Association Report*

(1989) states, "Both the 'need for' instructional excellence and an impending shortage of teachers are national problems, requiring national leadership to support and encourage quality teachers... Teacher ability is a powerful determinant of student learning. If our objective is the finest education system in the world, American people and their elected officials at federal, state, and local levels 'need' to provide money and support to give students what they must have: good teachers."

According to a report by The Florida Council on Vocational Education (1990), "...the lack of Florida teacher graduates contributes greatly toward shortages....inability(ies) to attract qualified candidates (is) a significant barrier." Moreover, this report generalizes that most of the vocational teachers come from out-of-state and business and industry. Additionally, according to this report, very few vocational teachers in Florida are graduates from Florida vocational teacher education programs.

One indicator of vocational teacher effectiveness is how pleased are employers with graduates of the program. *The Florida Employer Opinion Survey Annual Report* (1992), prepared by the Florida Education and Training Placement Information Program, includes information about employer satisfaction with overall vocational education including general entry preparation and employee workhabits. The report also includes information about employer satisfaction with occupational and technical skill preparation as well as basic skills education. It concludes that "Florida employers were satisfied with the vocational preparation of their employees who had been hired into training-related positions within their firms. Employers were most satisfied with an array of occupationally specific training elements their employees exhibited and less satisfied with basic skills, particularly written communication."

Initiation of Vocational Teacher Education Study

To assure that Florida vocational educators will continue to make vital contributions, a project -- The Vocational Teacher Education Project (VTEP) -- was funded by the Division of Vocational Adult and Community Education (DVACE) in the Florida Department of Education for The Center for Needs Assessment and Planning, at Florida State University, to re-examine vocational teacher education preparation and recommend criteria for a model program. The project was designed to examine what skills, knowledges, attitudes and abilities (SKAA's) vocational teacher's should possess in relation to the SKAA'S produced currently by vocational teacher preparation programs in the state of Florida.

An Advisory Committee for the project was formed comprised of representatives of the stakeholder groups in The Florida Vocational Education System (see Appendices A & B). These groups include: The Department of Education, vocational educators including administrators and teachers, university teacher educators, and the VTEP project staff. It is important to involve as broad a representation of concerned individuals as possible to share their visions, information, and concerns about the performance and

preparation and possible future work requirements for vocational educators. As Peter Drucker keeps reminding us, unless there is transfer of ownership so that vocational educators and other significant educational leaders and decision makers perceive this project as "our VTEP" and not "DOE/DVACE/FSU's VTEP" the project efforts will sit and gather dust on shelves throughout Florida.

III. VIEWS OF FLORIDA VOCATIONAL EDUCATORS

The views, beliefs, attitudes and concerns of state and local vocational educators are an important component of any study of vocational teacher education. In recognition of this, the first major activity of the project staff was to gather input from vocational teacher education faculty, school district and community college vocational administrators, area vocational center staff and administrators, and the Department of Education. These ideas represent their view -- justified or not -- of reality. A summary of these concerns are listed below, by topic. Within each topic, statements have been classified into "What Is" and "What Should Be" categories.

Pre-Service Requirements

What Is

- Non-degree teachers have not been prepared thus far to effectively teach when they enter the classroom and have not been encouraged to receive further training in education.
- Cognitive domain of learning is presently more emphasized in vocational teacher preparation than is the affective and psychomotor domains.
- Training in and commitment to professional ethics appears to be on the decline among vocational teachers as indicated by (1) the record of Professional Practice violators and (2) membership in state level professional organizations.
- There are both common and unique competencies for teachers in each of the vocational areas, which justifies providing both generic and specific methods courses.
- Criteria and methods used to evaluate vocational education student teachers must be performance-based, with ongoing remediation available. College classroom performance is not the same as performance during the teaching internship.
- Vocational teacher degree programs do not always include instruction on how adults learn. Learning theory and principles appropriate for youth, adolescents and adults should be included in the instruction.

What Should Be

- Vocational student teachers should have a supervised pre-teaching experience in a school setting very early in the teacher preparation program. This experience should be prior to the teaching internship to ensure that this is a career which they really desire.
- Vocational teachers should know and understand how the varying values, work-ethics and languages of multi-cultural minority, handicapped and disadvantaged groups of students impacts the teaching-learning process and be able to effectively motivate, train, and encourage these students towards personal success.
- Vocational teachers should know how to identify learning problems and interpret diagnostic data on students as a basis for assessing those students who should be referred for special services.

- Vocational teachers should know how to recognize at-risk students due to drugs, personal abuse, and other profiles, and how to counsel them into appropriate special services.
- Vocational teachers should know how to effectively network with parents and families, and identify and utilize community resources to enhance the instructional programs to maximize student learning.
- Vocational teachers should understand the role and importance of affiliation with and participation in professional organizations at the local, state and national levels.
- Vocational teachers should have the SKAA'S to work with their academic colleagues and school administrators to assure that the required levels of basic skills are attained by the vocational students appropriate to their occupational area. This basic skills instruction is delivered by instructional components external to vocational education, but vocational educators are responsible to ensure its delivery and verify mastery.
- Vocational teachers should receive their supervised pre-teaching experience and do their teaching internship in school sites (Option 1) selected by the university teacher educators and not the school district leadership; (Option 2) where master teachers are working. Methodology must be developed that provides communications between school districts and university faculty to ensure both understand the others requirements for interns and teachers.
- Vocational teachers should have both technical and professional SKAA's before entering the classroom to teach. On-the-job training should not be permitted as the only means of teacher preparation.
- Non-degreed vocational teachers should have a minimum of one week pre-service (40 hours) prior to beginning their classroom experiences with students. Basic classroom survival skills and a plan for the first two weeks of instruction should be completed during this pre-service session. University vocational teacher education faculty should be available to work with each non-degreed teacher one-half day per week during the first two years of service.
- Vocational teachers should be able to motivate their students to be lifelong learners, encouraging them to always be able to adapt and adjust to a changing society.

<u>In-Service</u>

What Is

- Quality and content of the in-service instruction for teachers has been unacceptable to some teachers and local vocational administrators. Student evaluations, of the instruction, apparently have not been effective to correct the problem. Many times the description of the course in the catalogue and what is taught do not relate.

<u>Certification</u>

What Should Be

- Non-degree vocational teachers should be permitted to teach under the stipulation that they are also enrolled in a degree program. Such a

program must be made easily accessible and desirable through career ladder certification and salary incentives.

Recruitment

What Is

- There is no organized recruitment effort to attract individuals, especially high school students into vocational teaching.

What Should Be

- Vocational teacher candidates should be recruited on the basis of their interest in teaching, a love for people, a commitment to equality, and a caring and empathetic personality, as well as technical competence in the specialization area. This should begin with high school students.
- Vocational youth clubs can and should be used for teacher recruitment. Therefore, all vocational programs at the secondary level should have an active youth club.

Inter Agency Coordination

What Is

- University vocational teacher education faculty are out of the vocational education dissemination loop from the State Department of Education. For example, very little regarding teacher certification, legislative changes and rules regarding teachers in general are discussed with university faculty. Therefore many questions from teacher education students cannot be answered by university faculty.

Other

What Is

- Resources are assigned to vocational teacher education by the State University System on the basis of degree-seeking enrollments. This is a problem for vocational teacher education in meeting the demand for courses to assist non-degreed teachers to complete certification requirements and other short-term, non-credit, staff development actives requested by local educational agencies for teachers and administrators. The degree-seeking component currently is a much smaller enrollment track. Also, when vocational faculty provide critical technical service and assistance to the private sector the funding criteria does not recognize that activity.
- Many students in the vocational teacher education program could be called non-traditional--often older, these persons are often part-time students who take up to 10 years to complete a program while working part-time or full-time.
- The availability of data (hard and soft) which indicates where vocational teacher training may be failing--in terms of students' ultimate self-sufficiency, must be demonstrated before some of the university vocational faculty are willing to offer suggestions for change.

- With the Department of Defense "build-down," we can anticipate significant numbers of military and civilian personnel to apply for teaching positions as a second career.
- The general population is unaware of the role and importance of vocational education. Greater public relations is important.
- This project has wide support among the vocational educators at all levels in the state. However, many individuals have expressed a concern that the results of this effort will sit on the shelves of the policy makers as have other reports and recommendations.

What Should Be

- The practice of using non-degreed teachers from business and industry should be restricted to the post-secondary level. Secondary level vocational teachers must be viewed by the colleagues as having an equal level of educational preparation for teaching.
- One of the most pressing and immediate problems is upgrading math, science and computer skills of our vocational teacher workforce. Coupled with this is the necessity to teach them how to integrate academics into their vocational programs.
- Having adequate knowledges of an occupation, as a result of working in a profession for a number of years, is becoming an inadequate reason to hire one for the teaching profession. Non-degreed or non-education degreed persons hired from business and industry must have individual training in the art of teaching in order for students to receive assistance in acquiring an appreciation for lifelong learning in addition to specific job skills and knowledges.
- Additional scholarships for students who enter vocational education, as a profession, should be made available. There are inequalities within scholarship programs, compared to other disciplines and athletics.

IV. KNOWLEDGE BASE FOR EFFECTIVE TEACHERS

Categories of Knowledge

Vocational education is expected to make a significant contribution to the preparation of individuals for **employment** and **success in life**. Individuals must possess the skills, knowledge, abilities and attitudes to enter and advance in the workplace and also to be a responsible citizen. To assure that Florida vocational education continues to meet these expectations and make a contribution to the collective success of Florida's citizen and businesses and industry, the Florida Department of Education funded this project. To focus this study on vocational teacher education is quite appropriate. To do so recognizes that quality vocational education is dependent upon quality -- competent, confident, caring -- vocational teachers.

If quality vocational education programs are dependent upon quality vocational teachers, the following questions must be addressed.

- What skills, knowledge, abilities and attitudes (SKAAs) should a vocational teacher have to be effective and efficient?
- What is the appropriate knowledge base upon which to plan, deliver and evaluate vocational teacher education at the pre-service and in-service levels?

Lynch and Griggs (1989) document that these are appropriate, but controversial questions. They report that these questions have been answered in a variety of ways, resulting in considerable inconsistencies in the policies and practices employed in preparing vocational education teachers throughout the country.

This project was designed to examine how these two questions should be answered in relation to how they are presently being answered in Florida. There seems to be general agreement that teachers must demonstrate competencies in three categories of knowledge. The categories are

- Academics (labeled arts and sciences)
- Technical content of the subject being taught
- How to teach (pedagogy).

Florida requirements for the certification of degreed vocational teachers and the qualifications for employment of non-degreed vocational teachers encompass these three categories. The terms used to identify these categories are:

- **General preparation** for the academics (liberal arts and sciences)
- **Specialization requirements** for the technical content of the subject area
- **Professional preparation** for how to teach (pedagogy).

The requirements for each of these categories are expressed in the number of semester credit hours in subject areas for the degreed teachers. The requirements for non-degreed teachers in the professional preparation category are completion of professional education in several identified areas of study without prescribing the number of semester credit hours.

Agreement that competencies in each of these categories are required to be an effective and efficient vocational teacher is not difficult to get until performance criteria for measuring achievement are part of the request.

The difficult task of identifying the "What should be" **professional competencies** stated in results and performance terms was a major focus of this project. A set of professional instructional goals and learner competencies for vocational teachers were developed and field validated. These are presented as the "What should be" SKAAs in the **professional preparation** category of the vocational teacher education knowledge base.

The procedure for determining "What should be" **general preparation** and **specialization requirement** competencies of the knowledge base are discussed and provided for in the holistic planning model recommended for use to plan vocational teacher education.

Professional Teaching Competencies

Vocational teachers who produce competent, confident, self-sufficient vocational education completers require skills, knowledge, abilities and attitudes in three distinct areas: technical content in the occupational specialty area; basic math, science and language arts; and professional pedagogy. Frequently, in the preparation of teachers, the professional pedagogy or teaching skills are overlooked as the technical and academic SKAAs are emphasized. Gage (1984) noted that **pre-service teachers** are **inadequately prepared** in the **pedagogical skills** required to teach successfully: course development and organization; lesson planning; classroom management; and student interaction (including creating motivation and interest, providing information, questioning, giving feedback, etc.). Unfortunately, vocational teachers with strong technical skills but poor pedagogical practice will be foiled in their efforts to produce satisfactory vocational education completers. In light of this, one objective of the VTEP project was to identify "What Should Be" pedagogical SKAAs and to develop professional goals and learner competencies for these SKAAs.

National Center PBTE/CBSD & VENAP Competency Comparisons

In determining what the essential competencies of vocational education teachers should be in the professional studies area, two sets of vocational teacher competencies were identified through research by project staff and input from interested and knowledgeable professionals. These competencies are the ones believed to be appropriate for vocational teachers to effectively

teach competency based vocational education. While there are many useful sets of competencies available, these two sets are believed to include the necessary and common competencies found in virtually all of the others.

A set of 654 performance elements was produced by the National Center for Research in Vocational Education at the Ohio State University (1978).[3] These 654 statements (National Center Professional Based Teacher Education/Competency Based Staff Development) are presented as a set of performance-based competencies that emphasize mastery and ability to demonstrate specific teaching skills. These performance elements are organized and presented in 15 categories, A-N and E-10 (see Appendix C).

Another set of 105 competencies were developed in a Florida-wide cooperative effort among vocational educators and the Center for Needs Assessment and Planning (CNAP) at Florida State University (see Appendix D). This activity was entitled the Vocational Education Needs Assessment Project, VENAP (1978). The Needs Assessment for Vocational Educators In Florida (1978) was developed to produce alternative instruments and strategies for assessing the perceived and real needs--the gaps between current competency and required abilities--of vocational educators with respect to a pre-specified set of desirable competencies for both vocational educators and administrators. Accompanying these objectives, a set of Competency Based Vocational Education System (CBVES) instructional materials were developed to teach those competencies identified as relevant to vocational teacher education. This set of competencies are referred to as the VENAP competencies in this report.

Project staff reviewed and compared these two field-validated and accepted sets of competencies to determine similarities and differences. Of particular concern was the PBTE/VENAP competencies focus on process and the lack of performance standards based on desired results. Additionally, the PBTE (654 competency statements) and VENAP (105 competency statements) documents were considered too lengthy and unwieldy to be useful in overall program planning. Following this review, a list of 38 results-oriented competency statements was drafted. This list was reviewed and revised by the VTEP Advisory committee and a **survey for field validation** was planned.

Competency Survey: Development and Implementation

VTEP staff, in cooperation with the VTEP Advisory Committee, designed a survey to validate the 38 statements of professional vocational competencies. The survey (Attachment E), asked respondents to indicate whether they agreed, disagreed or neither agreed/disagreed that each competency should be known and used to be a fully qualified vocational education teacher. Comments, or revisions, relating to the 38 competencies were requested, as well as suggestions for additional competencies that should have been included.

3Currently named The Center on Education and Training for Employment.

Surveys were mailed to 1,357 Florida vocational educators including teaching and administrative personnel from school districts, community colleges, universities (vocational teacher educators), the Florida Department of Education, the Florida Vocational Association and the Florida Council on Vocational Education. The total population of vocational teacher educators, occupational deans, district vocational directors, and Area Vocational Technical Center (AVTC) directors received surveys. Surveys were also sent to a selected sample of middle and high school teachers and principals, post-secondary teachers, occupational teachers and DOE staff from the Divisions of Vocational, Adult and Community Education; Public Schools; Community Colleges and Human Resources.

The selected sample was compiled from nominations submitted by community college occupational education deans, vocational education district directors, and the VTEP advisory committee. Additional participants for the selected sample were identified from DOE's vocational education database. This was done to assure cross-sectional representation by teaching area, years experience and geographic location.

Figure 1 shows the percentage of total surveys distributed by general area of responsibility, *i.e.*, teacher, administrator, teacher educator, etc.

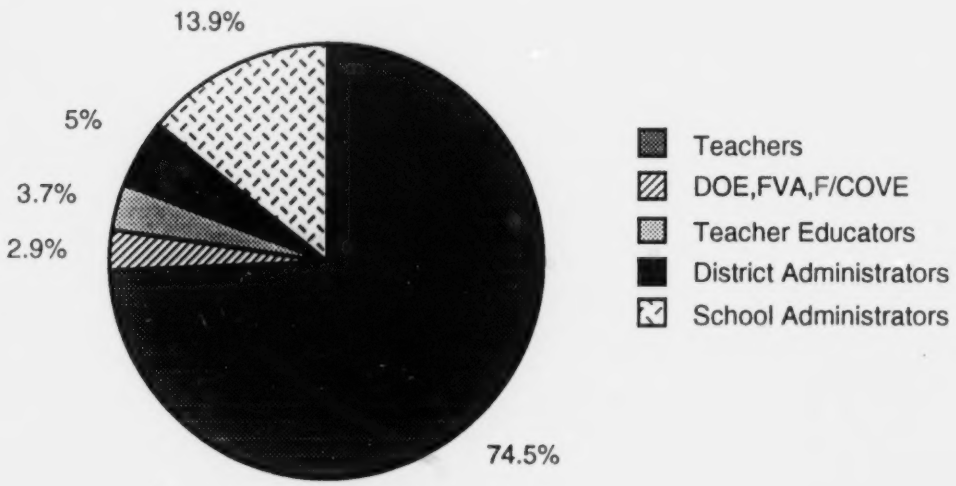

Figure 1.
Survey Distribution by General Area of Responsibility

Survey recipients were also classified into specific field expert groups. Table 1 reflects the number of surveys sent to each specific field expert group and the percentage of the total survey distribution represented by each group.

FIELD EXPERT GROUP	SURVEYS DISTRIBUTED	PERCENTAGE OF TOTAL
School District Personnel		
Middle School Teachers	94	7%
High School Teachers	426	31%
Post-2ndry Teachers	187	14%
Middle School Principals	42	3%
High School Principals	78	6%
AVTC Directors	35	3%
District Directors	68	5%
Community College Personnel		
Occupation Teachers	304	22%
Occupation Deans	33	2%
University Personnel		
Vocational Teacher Educators	50	4%
Department of Education Personnel		
DVACE	28	2%
DPS	2	less than 1%
DCC	2	less than 1%
DHR	2	less than 1%
FVA, F\COVE, Other	6	less than 1%
TOTAL	1357	100%

Table 1.
Survey Distribution by Field Expert Group

VTEP Survey Returns

A total of 566 completed surveys, representing 42% of those receiving surveys, were returned. Figure 2 indicates the survey distribution and returns for each field expert group.

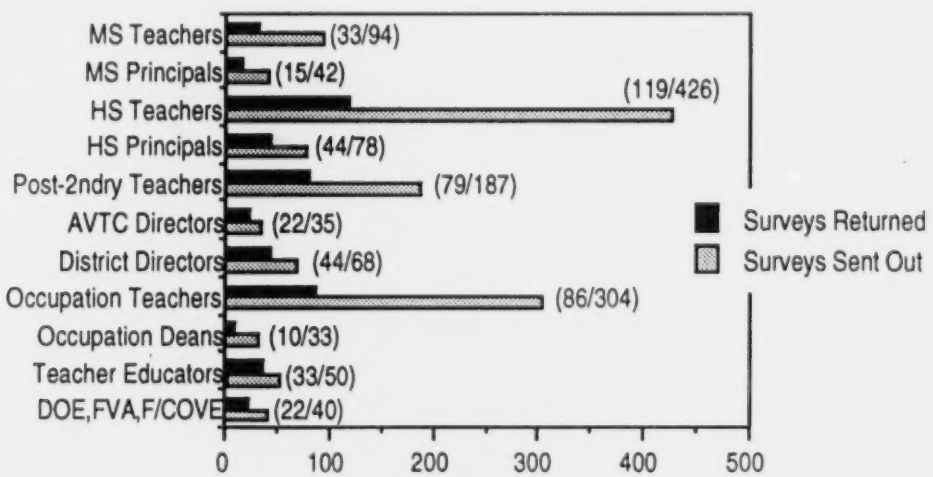

Figure 2.
Survey Distribution and Returns

Survey Returns by Field Expert Group

Table 2 reflects each field expert group's individual return rate and the overall percentage of total returns represented by that group.

FIELD EXPERT GROUP	GROUP RETURN RATE	PERCENTAGE OF TOTAL
School District Personnel		
Middle School Teachers	35%	6%
High School Teachers	28%	21%
Post-2ndry Teachers	42%	14%
Middle School Principals	36%	2%
High School Principals	56%	8%
AVTC Directors	63%	4%
District Directors	65%	8%
Community College Personnel		
Occupation Teachers	28%	15%
Occupation Deans	30%	2%
Vocational Teacher Educators	70%	6%
DOE, FVA, F\COVE	55%	4%
Other (More than 1, or no Expert Field Group Indicated)	–	10%
TOTAL	–	100%

Table 2.
Survey Returns by Field Expert Group

Vocational teacher educators had the highest field expert group response rate (70%), but it should be noted that they represent only 6% of the overall total returns. High school vocational and community college occupation teachers had the lowest individual field group return rates (28%), but they, along with the middle school and post-secondary vocational teachers, make up the majority (56%) of the total returns. Figure 3 indicates the percentage of total returns represented by general area of responsibility.

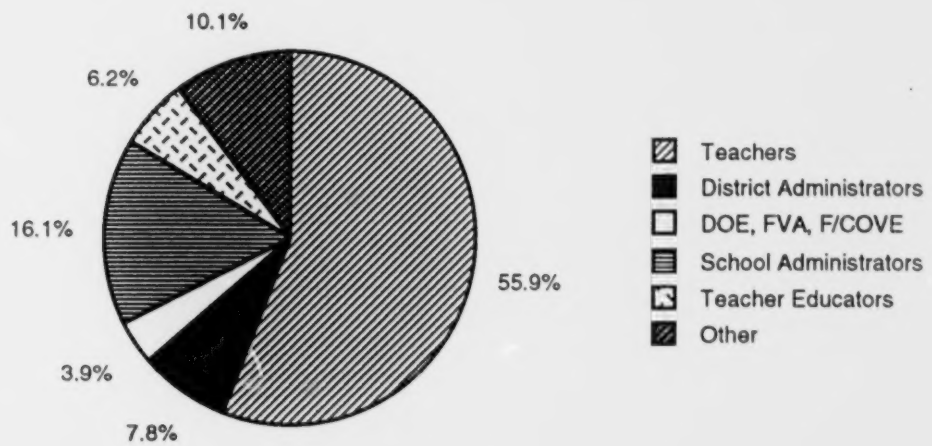

Figure 3.
Survey Returns by General Area of Responsibility

Respondents were also asked to indicate years experience and specific area of responsibility (administrative or teaching field). Over half the respondents (58%) indicated ten or more years experience, 19% showed 5-10 years experience and 14% had less than five years. Years experience was not reported in 9% of the returns. Industrial, business and health education were the largest teaching areas represented in the survey returns. Ten percent of those responding indicated multiple teaching areas or failed to respond to this item. Total response by teaching or other area of responsibility is indicated in Table 3.

AREA OF RESPONSIBILITY	SURVEYS RETURNED	PERCENTAGE OF TOTAL
*Administrative**	157	28%
Teaching		
Agribusiness	26	5%
Business	68	12%
Diversified Education	23	4%
Health Occupations	61	11%
Home Economics	42	7%
Industrial	85	15%
Marketing	13	2%
Public Service	12	2%
Technology Education	26	5%
Dual Teaching Areas**	32	6%
Teaching Area Not Indicated	21	3%
TOTAL	566	100%

*Returns in this classification include Middle and High School Principals, Vocational District Directors, AVTC Directors, Occupational Deans, Department of Education and FVA, FCOVE staff.
**Returns in this classification indicated two or more teaching areas were applicable.

Table 3.
Survey Returns by Specific Area of Responsibility

Survey Data Analysis

Data analyses on survey returns examined the agreement levels; that is, the percentage of respondents agreeing with each individual competency (Appendix F). From this analysis, reports were prepared to reflect the aggregate agreement level for the 566 responses, as well as agreement levels by field expert group category (vocational education teachers, vocational education administrators, vocational teacher educators, DOE, etc.) and by years experience category (0-5 years, 5-10 years, 10 or more years).

An overwhelming majority of the competencies had agreement levels of, or greater, than 90%. The aggregate analysis indicated that 23 of the 38 competencies had agreement levels equal to or greater than 90%. Eleven competencies had agreement levels between 80% and 90%, and the remaining four competencies ranged between 73% and 80%. No competency had an aggregate agreement level less than 73%.

Competencies 8, 9, 16 and 17 received the lowest aggregate agreement levels. However, field expert group agreement levels for these competencies

varied widely -- by as much as 31 percentage points. The vocational teacher field group agreement level for the four competencies averaged six percentage points lower than the aggregate rating, while vocational administrator and vocational teacher educator ratings averaged ten points higher. Clearly, the relevance and appropriateness of competencies 8, 9, 16 and 17 was perceived differently by the vocational teacher field group and the vocational administrator and teacher educator field groups.

Analysis by field expert group

Analysis of the 35 **vocational teacher educator** returns revealed a 100% agreement level for nine competencies, agreement levels between 90% and 100% for 24 competencies, 80% to 90% agreement levels for four competencies and a 77% agreement level for one competency.

Survey returns from 317 **vocational teachers** indicated agreement levels of, or greater than, 90% for 18 competencies, between 80% and 90% for 13 competencies, between 70% and 80% for five competencies and between 63% and 70% for the remaining two competencies.

The 157 **vocational education administrator** returns analysis yielded agreement levels greater than or equal to 90% for 33 competencies and between 80% and 90% for the five remaining competencies.

Florida Department of Education returns indicated 100% agreement with six competencies, between 90% and 100% agreement with 21 competencies, between 80% and 90% agreement for nine competencies and greater than or equal to 70% for the two remaining competencies.

Analysis by teaching area

Analysis of the 26 **agribusiness teacher/teacher educators** revealed agreement levels for individual competencies that ranged from 50 - 100%. One hundred percent of the respondents agreed with three competencies, between 90 and 99% agreed with 17 competencies, 80 - 89% agreed with 12 competencies, 70 - 79% agreed with three competencies and 50 - 65% agreed with the remaining three competencies.

Business teacher/teacher educators had agreement levels ranging from 67 - 100%. All 68 respondents agreed with one competency, 18 competency statements had agreement levels ranging from 90 - 99%, and 80 - 89% agreed with 17 competencies. The agreement levels for the remaining two competencies were 67% and 75%.

Agreement levels for the 23 **diversified education teacher/teacher educators** ranged from 53% - 100%. One hundred percent agreement levels were recorded for 10 competencies, agreement levels ranging between 90 and 99% were found for 9 competencies, 10 competencies had agreement levels between 80 and 89% and 6 competencies had agreement levels in the 70 - 79% range. One competency had an agreement level of 65%, and the remaining two competencies had agreement levels of 53% and 56%.

The sixty-one **health occupation teachers and teacher educators** had agreement levels ranging from 69% - 100%. One competency had an agreement level of 100% and 26 had agreement levels ranging from 90 - 99%. Agreement levels between 80 and 89% were recorded for 8 competencies, and the remaining three competencies had agreement levels of 69%, 70% and 79%.

Home economics teachers and teacher educators had agreement levels ranging from 66% - 100%. The 42 respondents in this group had an agreement level of 100% for one competency, agreement levels ranging from 90 - 99% for 23 competencies, and agreement levels between 80 - 89% for 10 competencies. The remaining four competencies had agreement levels ranging from 66% - 78%.

Agreement levels for the 85 **industrial teacher/teacher educators** ranged from 65% - 98%. Eighteen competencies had agreement levels between 90 and 98%, 15 competencies had agreement levels between 80 and 89%, 3 had agreement levels ranging from 70 - 79% and the remaining two competencies had agreement levels of 68% and 65%.

The 13 **marketing teacher/teacher educators** had agreement levels ranging from 69% - 100%. Eighteen of the competencies had agreement levels of 100%, 11 competencies had an agreement level of 92%, 6 competencies had an agreement level of 84-85%, one had an agreement level of 77%, and two had agreement levels of 69%.

Twelve **public service teacher/teacher educators** had agreement levels ranging from 42% - 100%. Six competencies had an agreement level of 100%, nine competencies had an agreement level of 92%, thirteen competencies had agreement levels of 84-85%, four competencies had an agreement level of 75%, and the remaining six competencies had agreement levels falling between 42% and 67%.

Agreement levels ranging from 54% - 100% were recorded for the 26 **technology teachers**. Three competencies had an agreement level of 100%, eleven competencies had agreement levels ranging from 90 - 99%, 17 competencies had agreement levels between 80 and 89%, the agreement levels for four competencies were between 70 and 79%, and the agreement levels for the remaining three competencies were between 54 and 66%.

Analysis of the returns by teaching area indicated that competencies 16 and 17 had the most disparity in agreement levels. Seventy-four percent of all respondents agreed with competency 16 (Organize and supervise vocational student organizations in a school setting so they will meet their objectives). However, public service, distributed education and technology education teachers had agreement levels of only 50 - 56% for this competency while marketing teachers had an agreement level of 85%. A similar distribution was found for competency 17 (Plan, implement and evaluate instruction for adult learners based on required competencies for the vocational offering).

Seventy-nine percent of all respondents agreed with this competency. However, agreement levels for home economics, distributed education, agriculture and technology education teachers ranged from 53% - 66%, while health occupation teachers had an agreement level of 90%.

Analysis by years experience

Analysis of the returns by years experience indicated that 90% or more of those respondents having ten or more years experience agreed with 23 competencies. This group registered agreement levels ranging between 80% and 90% for 12 competencies, and the three remaining competencies earned levels falling between 70% and 80%.

Those with five to ten years experience showed agreement levels greater than 90% for 26 competencies. Seven competencies received agreement levels between 80% and 90%, four competencies were between 70% and 80% and one competency received an agreement rating of less than 70%.

Respondents having less than five years experience indicated agreement levels equal or greater than 90% for 18 competencies. Agreement levels between 80% and 90% were recorded for fifteen competencies, and between 70% and 80% for four competencies. An agreement level less than 70% was recorded for one competency.

Survey Comments and Suggestions

Most of the comments (Appendix G) reflected concerns that the entire set of competencies were not appropriate for all vocational teachers. Fifteen survey responses indicated that the initial competencies dealing with occupational advisory committees, surveys, school-community relations programs, etc. were not applicable at the individual teacher level and were better handled at a district level. Comments from 49 respondents questioned whether all vocational teachers should be required to design vocational programs for special needs students.

Other comments focused on the importance of vocational educators maintaining up-to-date professional skills, knowledge, and abilities given the rapid technological and regulatory changes taking place in today's workplace. Twenty-two respondents voiced concerns about the difficulties educators face in staying abreast of change, as well as the critical role business and industry should play in this area.

During the course of the competency review and validation, questions were raised regarding the correspondence of these proposed competencies with **Florida's Essential Generic Competencies**. VTEP staff compared the two documents and determined that each of the Generic Competencies was addressed at some level in one or more of the VTEP competencies. While some of the correlations were very specific, others were broader in scope. However, the further development of instructional goals and performance indicators for vocational teacher education should provide additional clarification and

evidence that all the essential Generic Competencies are encompassed within the professional competencies developed by this project.

As part of the course EVT 5315 offered by the University of Central Florida in 1990, the DACUM process was used to develop a chart of duty areas and tasks for vocational instructors. In response to a survey comment, this DACUM (Developing a Curriculum) Chart for Vocational Education Instructors was also reviewed by project staff. Since the VTEP effort focuses on teacher competencies required for the development and delivery of effective vocational instruction, the duty area for institutional service addressed in the DACUM chart is not included. However, all other DACUM duty areas are covered.

Survey Summary

During the fall of 1991, a survey was designed and administered to validate the 38 professional vocational competencies developed as part of the VTEP project. A total of 1,357 surveys were mailed to Florida vocational educators, including teachers and administrators from school districts, community colleges, universities, the Florida Department of Education, the Florida Vocational Association Board of Directors and the Florida Council on Vocational Education. Five hundred and sixty-six (566) of the surveys were completed and returned yielding a return rate of 42%.

The majority of the completed surveys came from vocational education teachers (56%), followed by school administrators (16%), district administrators (8%), university teacher educators (6%) and Department of Education and vocational organization administrators (4%). The remainder of the surveys were completed by educators falling into two or more of the identified groups, or by respondents who failed to indicate their area of responsibility. Over half the educators responding (58%) indicated ten or more years experience in vocational education, 19% had 5-10 years experience, 14% had worked less than five years, and 9% did not report this information.

Survey returns indicated overwhelmingly positive agreement with the 38 competencies. Only four competencies, numbers 8 and 9 (dealing with vocational teacher prescription of special services and development of materials for special needs students); number 16 (incorporation of vocational student organizations into the school setting); and number 17 (provision of instruction for adult learners); received agreement ratings of less than 80%. No competency received an aggregate agreement rating of less than 73%. Competencies with agreement ratings of less than 80% were generally perceived by vocational teachers to be less appropriate, while vocational administrators and vocational teacher educators tended to view them as more important.

Competency 8, *"Prescribe the appropriate sources for students to receive special services and/or learning experiences and assure that they are successfully delivered,"* received an aggregate agreement rating of 79%, 9% disagreed, 10% neither disagreed or agreed, and 2% felt the competency was

not applicable. Vocational teachers agreement ratings for this competency ranged from 73% (post-secondary teachers) to 77% (high school and occupational teachers). The lowest vocational administrator rating for this competency was 80% (middle school principals) and the highest was 91% (AVTC directors). Ninety-four percent (94%) of university vocational teacher educators agreed with the competency.

Competency 9, *"Develop and validate competency-based instructional materials for 'special needs' students, in a vocational offering,"* had the lowest aggregate agreement level of any competency. Seventy-three percent (73%) of all respondents agreed with this competency, 11% disagreed, 14% neither agreed or disagreed, and 2% felt the competency was not applicable. Vocational teachers (with the exception of middle school teachers) had the lowest agreement levels. These ranged from 55% (occupational teachers) to 72% (high school teachers). The lowest vocational administrator agreement level was 77% (AVTC directors) and the highest was 93% (middle school principals). Middle school teachers also had a high agreement level (91%). Vocational teacher educators had an agreement level of 77%.

Competency 16, *"Organize and supervise vocational student organization(s) in a school setting so they will meet their objectives,"* had an aggregate agreement rating of 74%. Seven percent (7%) disagreed and 1% indicated the competency was not applicable. However, a significant number of the respondents (18%) neither agreed or disagreed. This was the highest "neutral" rating received by any competency, and only two other competencies had neither agree or disagree rating levels that were greater than 10%. Vocational teacher agreement ratings ranged from a low of 50% (occupational teachers) to a high of 74% (high school teachers). Administrator agreement levels ranged from 90% (occupational deans) to 96% (district and AVTC directors). Eighty-nine percent (89%) of vocational teacher educators agreed with this competency.

Seventy-nine percent (79%) of all respondents agreed with competency 17, *"Plan, implement and evaluate instruction for adult learners based on required competencies for the vocational offering."* The disagreement level was 3%, and 9% neither agreed or disagreed. An additional 9% indicated that they felt the competency was not applicable. This was the highest "not applicable" rating received by any competency. No other competency had a "not applicable" rating greater than 3%. Vocational teacher ratings for the competency varied by population service area. Middle school teachers had an agreement level of 49% and 56% of high school teachers agreed. However, 87% of occupational teachers and 96% of post-secondary teachers agreed with this competency. Administrator ratings also varied according to service area. Sixty-eight percent (68%) of high school principals and 86% of middle school principals agreed with the competency, but 91% of district directors and 100% of AVTC directors and occupational deans agreed. Vocational teacher educators indicated an agreement level of 83%.

Development of Professional Goals and Learner Competencies

The results of the competency survey were reviewed and discussed by the VTEP Advisory Committee. Based on the endorsement provided by the survey returns, the committee recommended that the next phase of the project should be the development of instructional goals and performance indicators for the 38 professional competencies. It was determined that the development of goals and indicators would provide the data required to conduct needs assessments for pre-service and in-service vocational teacher education.

A plan for the development of instructional goals and performance indicators relating to each validated competency was discussed and approved. Following this plan, a group of Vocational Teacher Educators working together developed the instructional goals for each competency. During this process, they determined that performance criteria and measurable indicators for each goal should be developed by the teacher educators in each occupational specialty area.[4]

A draft version of the competencies and goals was distributed to vocational teacher educators at each of the state universities offering vocational teacher education. The vocational teacher educators were asked to review and revise the statements for accuracy and completeness. During the review period, several suggested that the 38 validated competencies were actually goals, and the more specific instructional goals were actually statements of learner competencies that should be acquired. Consequently, the 38 statements of competencies that were field-validated have been renamed instructional goals, and the specific instructional goal statements developed by the representative teacher educator group have been termed learner competencies. These, and other revisions suggested by the reviewers, were incorporated into the final version of the instructional goals and learner competencies that follow.

Instructional Goals and Learner Competencies

AREA: PLANNING AND DEVELOPMENT

Instructional Goal 1.0. Establish and maintain an occupational advisory committee for the purposes of obtaining vocational education direction, guidance, and requirements for learner performance.

Learner Competencies:

The learner will be able to[5]

1.1. Describe the roles, functions and contributions of occupational advisory committees.

1.2. List appropriate, valid criteria for use in the selection of occupational advisory committee members.

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[4]This, it is urged, should be completed.

[5] Mager (1984) suggests using the words "will be able to" when goals or objectives reference desired learner capabilities -- things we want the learner to be able to do. This phrase indicates that the skill or ability should be available on demand.

1.3. Define a general procedure for securing administrative approval to establish occupational advisory committees, including the objectives to be obtained.
1.4. Develop a written plan and timeline for organizing and orienting an occupational advisory committee to provide vocational education direction and guidance.
1.5. Outline procedures for maintaining, managing and evaluating the ongoing operations of an occupational advisory committee.

Instructional Goal 2.0. Develop and implement a valid occupational survey[6], obtain and analyze the results, and develop curriculum, course and learner performance recommendations for vocational programs.
Learner Competencies:
The learner will be able to
2.1. State the value and purpose of a valid occupational survey.
2.2. Outline a general procedure for obtaining administrative approval to conduct an occupational survey.
2.3. Develop a written plan with timeline and budget requirements for developing and conducting a valid occupational survey.
2.4. Conduct a valid analysis of occupational survey data.
2.5. Develop written vocational program recommendations based on the occupational survey data analysis, which if implemented will meet needs and related objectives.

Instructional Goal 3.0. Develop, promote, implement and evaluate a school-community relations program for vocational education which will result in maintaining and possibly increasing the number of learners enrolled, completed, and placed.
Learner Competencies:
The learner will be able to
3.1. State the value, purpose and payoffs of a school-community relations program for vocational education.
3.2. Define a procedure for obtaining administrative approval to establish, maintain, and continuously improve a school-community relations program for vocational education.
3.3. Select appropriate strategies to be used in a school community relations program for vocational education.
3.4. Develop a written plan with timeline and budget requirements for developing, implementing and evaluating an effective school-community relations program for vocational education, which if implemented will meet needs and related objectives.

Instructional Goal 4.0. Evaluate the effectiveness of offered vocational programs, based on required job competencies.
Learner Competencies:
The learner will be able to

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[6] The survey may include written and oral interview or questionnaire data collection techniques.

4.1. State the value, purpose and payoffs of evaluating the effectiveness, efficiency and relevancy of vocational programs based on job competencies.
4.2. Define a procedure for implementing an evaluation process for determining the effectiveness and efficiency of existing vocational programs, based on required job competencies and social payoffs.
4.3. Design valid data collection instruments or techniques for evaluating vocational programs.
4.4. Determine program effectiveness and efficiency based on vocational program evaluation data analysis, which will identify what worked and what should be changed.
4.5. Develop a dissemination plan for sharing results of the vocational program

Instructional Goal 5.0. Identify gaps/discrepancies between community requirements and the performance objectives of current vocational offerings.
Learner Competencies:
The learner will be able to

5.1. Identify valid sources of community input for determining community requirements for vocational offerings.
5.2. Identify procedures for securing information to determine community requirements for useful vocational offerings.
5.3. Compare community requirements and current or projected performance objectives of vocational offerings and identify gaps/discrepancies and priorities based on costs to meet the needs vs. those to ignore it.

Instructional Goal 6.0. Write results oriented goals and objectives to close any gaps/discrepancies between occupational requirements and the performance objectives of vocational offerings.
Learner Competencies:
The learner will be able to

6.1. Differentiate among results-oriented program goals, program objectives and required student performance (instructional) objectives.
6.2. Develop written program goals and objectives consisting of results and activities or actions to be accomplished.
6.3. Develop written results-oriented program objectives consisting of conditions, performances and criteria to be utilized for evaluation of the instruction delivered.
6.4. Develop written student performance (instructional) objectives consisting of conditions, performance, and criteria to be used in the planning and evaluation of learning in each of the major learning domains (i.e., cognitive, affective, psychomotor).
6.5. Analyze written results-oriented program goals and objectives to assure vocational offerings address occupational requirements and revise as required.

Instructional Goal 7.0. Identify students requiring special services and or learning experiences, e.g. students who are learning disabled, have behavior disorders, are emotionally impaired, or experience cultural barriers.
Learner Competencies:
The learner will be able to

7.1. Describe types of learning disabilities students may have in a vocational education environment.
7.2. Develop strategies to identify students potentially requiring special services or learning experiences due to disabilities or cultural, socio-economic, gender or equity barriers.
7.3. Develop a strategy that utilizes existing educational resources to obtain a diagnosis of specific learning disabilities or barriers which will meet special populations objectives.

Instructional Goal 8.0. Prescribe the appropriate sources for students to receive special services and or learning experiences and assure that they are successfully delivered.
Learner Competencies:
The learner will be able to

8.1. Identify sources of special services and learning experiences for students with specific learning disabilities or barriers.
8.2. Identify procedures for securing services for students with specific learning disabilities or barriers.
8.3. Develop an evaluation strategy to determine the effectiveness of the services delivered to students with specific disabilities and barriers.
8.4. Provide input in the development of an individual education plan (IEP).

Instructional Goal 9.0. Develop and validate competency-based instructional materials for "special needs" students, in a vocational offering.
Learner Competencies:
The learner will be able to

9.1. Develop instructional strategies for students with specific learning disabilities or barriers.
9.2. Identify sources of competency-based instructional materials which can be adopted for use with specific learning disabilities or barriers.
9.3. Identify strategies for adapting competency-based instructional materials for students with specific learning disabilities or barriers.
9.4. Develop competency-based instructional materials for students with specific learning disabilities or barriers in the absence of materials that can be adopted or adapted.
9.5. Formatively evaluate competency-based curriculum materials with students with specific learning disabilities or barriers.
9.6. Validate competency-based instructional materials for students with specific learning disabilities or barriers through employer/business evaluation and/or student demonstration of competency.

Instructional Goal 10.0. Plan and implement learning experiences which eliminate potential negative learner impact from cultural differences, gender and equity biases.
Learner Competencies:
The learner will be able to

10.1. Describe the positive and negative impact cultural, gender and equity differences and biases have on students in a learning environment..
10.2. Develop teaching strategies including curriculum that are free of cultural, gender and equity biases.
10.3. Implement learning experiences that involve all students regardless of cultural background or gender.
10.4. Develop an evaluation procedure to ensure a positive learning environment exists, taking into account cultural differences, gender and equity biases, which results in equity of results.

Instructional Goal 11.0. Determine the skills, knowledges, abilities, and attitudes required for a student to successfully complete a vocational offering.
Learner Competencies:
The learner will be able to

11.1. Identify sources of materials and resources available to assist in the development of required skills lists for a vocational offering.
11.2. Develop a plan to conduct a task analysis for a vocational offering.
11.3. Conduct a task analysis for a given vocational offering.
11.4. Develop a list of required skills, knowledges, abilities and attitudes (SKAAs) for a vocational offering utilizing existing competency lists and results from the task analysis.
11.5. Involve and utilize an occupational committee input in assessing SKAAs required for successful completion of a vocational offering.

Instructional Goal 12.0. Write, review and sequence measurable results-based student performance standards to close any gaps/discrepancies between the learners skills, knowledges, abilities, and attitudes and those required to become productive workers and citizens in a specific occupation.
Learner Competencies:
The learner will be able to

12.1. Define the components of a results-based performance standard.
12.2. Classify statements of desired learner skills, knowledges, abilities and attitudes into the cognitive, affective or psychomotor domains.
12.3. Identify existing skill, knowledge, ability or attitude capabilities demonstrated by vocational educational students.
12.4. Write valid measurable performance objectives for a required learner skill, knowledge, ability or attitude.
12.5. Identify pre-requisites for terminal performance objectives.
12.6. Write valid cognitive, affective and psychomotor enabling objectives.
12.7. Identify an appropriate sequence of performance objectives based on a valid instructional analysis of a required learner performance.

Instructional Goal 13.0. Develop a unit of instruction, including lesson plans, to close any gaps/discrepancies between the learners skills, knowledges,

abilities and attitudes and those required for mastery of job competencies of a specific vocational offering.
Learner Competencies:
The learner will be able to

13.1. Develop valid unit goals and objectives based on required learner results for a specific vocational offering.
13.2. Develop valid terminal objectives based on unit goals for a specific vocational offering.
13.3. Develop valid enabling objectives related to terminal objectives for a unit in a specific vocational offering.
13.4. Develop lesson plans including instructional (performance) objectives, evaluation strategies, teaching and learning activities, resources, required equipment, supplies, materials, tools; and timeframes for implementation.
13.5. Evaluate learner achievement and make modifications, revisions, or adaptations to lesson plans as required.

Instructional Goal 14.0. Prepare and or select instructional materials to achieve measurable results-based student performance objectives required for a course or unit of vocational instruction.
Learner Competencies:
The learner will be able to

14.1. Identify sources (commercial or other, i.e. state or national research centers) of validated instructional materials that contribute to student achievement of specific, measurable results-based performance objectives.
14.2. Select instructional materials that contribute to student achievement of specific, measurable results-based performance objectives.
14.3. Develop instructional materials that contribute to student achievement of specific, measurable results-based performance objectives.
14.4. Select instructional materials with different levels of difficulty appropriate to challenge a variety of students learning styles.
14.5. Develop instructional materials with different levels of difficulty appropriate to challenge a variety of students learning styles.
14.6. Select valid instruments that assess the effectiveness and efficiency of instructional materials.
14.7. Develop valid instruments that assess the effectiveness and efficiency of instructional materials and provide data on what to continue and/or change.

Instructional Goal 15.0. Implement instructional strategies and tactics which eliminate negative impact on learning due to individual learner differences as to motivation level and learning potential.
Learner Competencies:
The learner will be able to

15.1. Identify different individual learning styles.
15.2. Develop valid instructional strategies that effectively accommodate specific learning styles.

15.3. Implement valid instructional tactics for a given style of learner.
15.4. Evaluate instructional tactics to determine effectiveness with different learning styles and revise as required.

Instructional Goal 16.0. Organize and supervise vocational student organization(s) in a school setting so they will meet their objectives.
Learner Competencies:
The learner will be able to

16.1. State the value, purpose and payoffs of vocational student organizations to the vocational instructional program.
16.2. Describe the scope and nature of vocational student organizations relative to the vocational instructional program.
16.3. Develop a written plan with timeline for establishing and organizing a vocational student organization.
16.4. Define a general procedure for managing the ongoing operations of a vocational student organization.
16.5. Integrate the vocational student organization into the curriculum.

Instructional Goal 17.0. Plan, implement, and evaluate instruction for adult learners based on required competencies for the vocational offering.
Learner Competencies:
The learner will be able to

17.1. Identify andragogical (adult learning) principles related to vocational instruction to accommodate successful adult learning.
17.2. Develop lesson plans including instructional performance objectives for adult learners in vocational programs.
17.3. Select instructional tactics, materials and evaluation instruments appropriate for adult learners in vocational programs.
17.4. Develop instructional tactics, materials and evaluation instruments appropriate for adult learners in vocational programs
17.5. Evaluate adult learner achievement and make modifications, revision or adaptations to lesson plans as required.

Instructional Goal 18.0. Select and use educational media/technologies to present a lesson or unit of instruction which will result in meeting course objectives.
Learner Competencies:
The learner will be able to

18.1. Operate educational media/technology equipment in a safe and skilled manner.
18.2. Select appropriate educational media/technology that contributes to student achievement of specific measurable results-based performance objectives.
18.3. Use media technology, including software, legally in accordance with federal copyright law.

Instructional Goal 19.0. Identify and obtain or develop remedial instructional materials which assist learners to successfully achieve required performance objectives for a unit of instruction for a specific vocational offering.

Learner Competencies:
The learner will be able to

19.1. Identify learner requirements for remedial instruction.
19.2. Develop instructional plans for learners requiring remedial instruction.
19.3. Identify sources of remedial instructional materials that enable learners to achieve performance objectives for a specific vocational offering.
19.4. Develop remedial instructional materials for a specific vocational offering based on the desired characteristics of remedial instructional materials.
19.5. Evaluate learner achievement and make modifications or revisions to the remedial instructional plan and accomplishments.

Instructional Goal 20.0. Identify and integrate, into a vocational offering, related academic skills and knowledge based on required job and social competencies.
Learner Competencies:
The learner will be able to

20.1. Analyze curriculum frameworks to identify related academic skills and competencies required for job and social competencies in a specific vocational program offering.
20.2. Develop strategies to implement collaborative working relationships with academic faculty to facilitate the integration of academic and vocational competencies into the vocational curriculum.
20.3. Develop specific tactics to involve academic faculty in the improvement of technical reading, writing, oral communications, math, and survival skills in vocational students.
20.4. Identify social and ethical competencies required for securing, maintaining and advancing in employment.
20.5. Develop strategies to implement collaborative working relationship with all faculty to facilitate the integration of social and ethical competencies into the total curriculum.
20.6. Evaluate learner achievement and make modifications and revisions to the collaborative working relationship used to implement academic, social and ethical competencies into the curriculum.

Instructional Goal 21.0. Plan and implement instruction which successfully develops critical thinking and problem-solving skills of learners.
Learner Competencies:
The learner will be able to

21.1. Describe critical thinking and problem-solving skills and attitudes and their sub-components.
21.2. Analyze the curriculum frameworks to provide a basis for incorporating problem-solving and critical thinking skills into the instructional plan.
21.3. Incorporate critical thinking and problem-solving skills into instructional plans and classroom implementation.

21.4. Evaluate learner problem solving and critical thinking skill performance and make modifications and revisions to instructional plans and class materials and implementation.

Instructional Goal 22.0. Define and use the vision, philosophy, mission and objectives of vocational education as the basis for making professional decisions.

Learner Competencies:

The learner will be able to

22.1. Describe the dynamic interrelationship between vocational education and the growth and development of our society.

22.2. Articulate Florida's vision, mission and objectives for vocational education.

22.3. Explain any differences that exist between the learner's personal vision, mission and objectives for vocational education and those of the state of Florida.

22.4. Describe the dynamic interrelationship between the vision, philosophy, mission and objectives of vocational education and professional decision-making.

22.5. Make required changes to vocational education objectives and evaluation criteria.

AREA: IMPLEMENTATION AND MANAGEMENT

Instructional Goal 23.0. Implement instructional strategies and tactics to motivate students which will improve reading, writing, mathematics, oral communication and personal development skills appropriate for job and social competencies of a vocational offering.

Learner Competencies:

The learner will be able to

23.1. Identify strategies for motivating students to successfully complete vocational offerings.

23.2. Develop tactics for incorporating motivational strategies into instructional plans and classroom implementation.

23.3. Evaluate learners achievement and make modifications and revisions to the motivational strategy component of the instructional plan.

Instructional Goal 24.0. Identify, organize, schedule, obtain and allocate classroom, laboratory, and shop instructional resources on the basis of student performance objectives and the job competencies of a vocational offering.

Learner Competencies:

The learner will be able to

24.1. Identify the instructional resources required to support students achievement of performance objectives for a specific vocational offering.

24.2. Identify procedures for obtaining equipment, materials and supplies to support the instructional plan.

24.3. Organize resources which will achieve optimal utilization and effectiveness in classroom implementation of the instructional plan.

Instructional Goal 25.0. Demonstrate first-aid and safety procedures in vocational classroom, shop and laboratory settings which meet established workplace standards.
Learner Competencies:
The learner will be able to

25.1. Identify legal requirements governing safety procedures for vocational classroom, shops and laboratories in Florida public schools.
25.2. Establish plans for a safe vocational instruction environment that incorporates legal requirements and workplace standards.
25.3. Establish safety procedures for a specific vocational program area.
25.4. Demonstrate basic first-aid procedures for medical emergencies that may occur in vocational programs.

Instructional Goal 26.0. Implement group dynamic strategies that develop learner skills required to work cooperatively and collaboratively with others to achieve specific objectives.
Learner Competencies:
The learner will be able to

26.1. Identify group dynamic strategies that support cooperative and collaborative learning to achieve performance objectives in specific vocational offerings.
26.2. Develop group dynamic tactics that support cooperative and collaborative learning to achieve performance objectives in specific vocational offerings.
26.3. Incorporate group dynamic tactics that support cooperative and collaborative learning into an instructional plan and classroom implementation.
26.4. Evaluate learner achievement and make modifications and revisions to the group dynamic strategy component of the instructional plan.

Instructional Goal 27.0. Develop and reinforce positive attitudes towards mutual respect in student/student and student/teacher relationships so that learners' performance will meet or exceed course/program objectives.
Learner Competencies:
The learner will be able to:

27.1. Identify strategies to create and reinforce positive attitudes and mutual respect between students and teachers.
27.2. Develop tactics to create and reinforce positive interpersonal relations between student and student, and student and teacher.
27.3. Incorporate interpersonal relations tactics into an instructional plan and classroom implementation.
27.4. Evaluate learner achievement and make modification and revisions to the interpersonal relations strategies component of the instructional plan and classroom implementation.

Instructional Goal 28.0. Develop and reinforce positive attitudes towards learning as a continual process and an individual responsibility so that learners performance will meet or exceed course/program objectives.
Learner Competencies:
The learner will be able to

28.1. Identify benefits that lifelong learning contributes to personal success in employment and life.
28.2. Identify strategies to create and reinforce positive attitudes for and personal responsibility to lifelong learning.
28.3. Develop tactics to create or reinforce positive learner attitudes toward lifelong learning.
28.4. Incorporate tactics to create or reinforce positive attitudes toward lifelong learning into an instructional plan and classroom implementation.
28.5. Evaluate learner achievement and make modification and revisions to the lifelong learning strategies component of the instructional plan, classroom implementation, and evaluation criteria.

Instructional Goal 29.0. Implement learning strategies which develop positive self esteem in learners which will result in their identifying and setting personal and vocational career goal(s).
Learner Competencies:
The learner will be able to

29.1. Identify strategies that develop positive self-esteem in learners.
29.2. Develop tactics to create or reinforce positive self-esteem in learners.
29.3. Identify strategies to assist learners in personal goal setting and career planning.
29.4. Develop tactics for assisting learners in personal goal setting and career planning.
29.5. Incorporate tactics to create or reinforce positive self-esteem, personal goal setting and career planning into an instructional plan and classroom implementation.
29.6. Evaluate learner performance and make modifications or revisions to the self-esteem, goal setting and career planning components of the instructional plan, classroom implementation, and evaluation criteria.

Instructional Goal 30.0. Relate classroom, shop, and laboratory instruction to the responsibilities of becoming a self sufficient, self reliant, productive member of a community and society.
Learner Competencies:
The learner will be able to

30.1. Identify strategies to create and reinforce positive attitudes toward self-sufficiency, self-reliance and productivity.
30.2 Develop tactics to create or reinforce positive learner attitudes toward self-sufficiency, self-reliance and productivity.
30.3. Incorporate tactics to create or reinforce positive attitudes toward self-sufficiency, self-reliance and productivity into an instructional plan and classroom implementation.

30.4. Evaluate learner achievement and make modification and revisions to the self-sufficiency, self-reliance and productivity strategies component of the instructional plan, classroom implementation, and evaluation criteria.

Instructional Goal 31.0. Identify, plan, manage and report requirements for and utilization of instructional resources based on required job competencies and learner performance objectives.
Learner Competencies:
The learner will be able to

31.1. Identify administrative procedures for planning, developing and submitting a budget in a local educational agency.
31.2. Develop a management plan for documenting utilization and impact of facilities and resources on achievement of objectives for a specific vocational offering.
31.3. Develop a plan for evaluating existing facilities and equipment and projecting long range facility improvement and expansion requirements.
31.4. Develop a departmental budget request based on information from the facilities and resource management and evaluation plans.

AREA: EVALUATION

Instructional Goal 32.0. Select and obtain or develop appropriate testing instruments to measure students achievement based on the stated goals and student performance objectives for a course and unit of instruction for a vocational offering.
Learner Competencies:
The learner will be able to

32.1. Identify sources (commercial or other) of appropriate and valid testing instruments to measure student achievement of performance objectives for a specific vocational offering.
32.2. Develop or select appropriate and valid testing instruments or assessment strategies to measure student achievement of performance objectives.
32.3. Analyze test results to corroborate test validity and revise as required, determine the reliability of individual test items and to identify performance objectives that have not been achieved by individual students.

Instructional Goal 33.0. Evaluate students day to day progress based on the prescribed unit or lesson objectives, in a vocational offering, using properly written criterion referenced examinations(s), essay(s), and performance check sheets representative of a job/task or product, and identify areas for further competency development.
Learner Competencies:
The learner will be able to

33.1. Define evaluation and grading as it pertains to (a) criterion referenced examinations, (b) performance check sheets.

33.2. Establish a system to document student progress toward achievement of performance objectives for a specific vocational offering.
33.3. Periodically evaluate individual student performance to identify progress toward achievement of specific course objectives and identify what should be revised or discontinued.

Instructional Goal 34.0. Devise self-evaluation techniques for students which accurately measure their level of achievement of performance objectives based on required job competencies for the vocational offering.
Learner Competencies:
The learner will be able to
34.1. Identify valid techniques and methods for student self-evaluation.
34.2. Select appropriate and valid self-evaluation techniques, or instruments for students in specific vocational offerings.
34.3. Develop appropriate and valid self-evaluation techniques, or instruments for students in specific vocational offerings.
34.4. Assess the effectiveness of the self-evaluation instrument or method and revise as required.

Instructional Goal 35.0. Analyze and interpret student performance measures on the basis of required job competencies for the vocational offering and use the data for feedback to learners for successful course delivery modification.
Learner Competencies:
The learner will be able to
35.1. Utilize representatives and other industry validated data to determine required competencies for a specific occupation.
35.2. Use valid, industry-based data relating to occupational competencies to revise or modify a specific vocational offering.
35.3. Develop a job competency record to use as a management assessment tool for a vocational offering, i.e. career map for specific occupation.

AREA: PROFESSIONAL ADVANCEMENT

Instructional Goal 36.0. Keep up-to-date professionally through state, local and national vocational organizations, short courses, seminars, personal readings, observations and advanced degrees, which will maintain and improve teacher effectiveness and efficiency.
Learner Competencies:
The learner will be able to
36.1. Identify long- and mid-term personal and professional career goals.
36.2. Identify the benefits of membership and participation in local, state and national vocational organizations for personal and professional development.
36.3. Identify the benefits for personal and professional development available through personal travel and study.
36.4. Identify the benefits of organized short courses, seminars and advanced degree for personal and professional development.
36.5. Develop and track long range and mid-term plans to achieve personal and professional career goals through professional

organizations, organized instruction, advanced degrees and personal travel and study.

Instructional Goal 37.0. Teachers will conduct themselves and participate in a life-style perceived by peers and community to be ethical and professional.
Learner Competencies:
The learner will be able to

37.1. Articulate the laws of Florida governing teacher liability and unethical practices.
37.2. Identify conduct and moral standards which are generally perceived by peers and community to be ethical and professional.
37.3. Identify conduct and moral standards which are generally perceived by peers and community to be unethical and unprofessional.

Instructional Goal 38.0. Identify the linkages between one's vocational area and those of general and higher education, so that vocational learners will a) get and keep jobs in their job areas, b) identify additional and future job requirements, and c) continue to be contributing employees and citizens.
Learner Competencies:
The learner will be able to

38.1. Describe employment opportunities for advancement related to a specific job within a general vocational area.
38.2. Describe the educational and experience requirements for advancement to a specific job within a general vocational area.
38.3. Identify the personal and societal short and long term benefits derived from a student's selection of a specific job and vocational area.
38.4. Identify strategies to create and reinforce student awareness of the benefits derived from specific jobs and vocational areas.
38.5. Develop tactics to create and reinforce student awareness of the benefits derived from specific jobs and vocational areas.
38.6. Incorporate tactics to create and reinforce student awareness of the benefits derived from specific jobs and vocational areas into an instructional plan and classroom implementation.
38.7. Evaluate learner achievement and make modification and revisions to the job and vocational benefits component of the instructional plan and classroom implementation.

Utilizing the Instructional Goals and Competencies

Before curricula is prepared that will assist students to achieve these learner competencies, vocational teacher educators for each **occupational specialty** must determine the **specific performance criteria** appropriate to their specific area that will be used to measure achievement of the learner competencies . In addition, the competencies must be analyzed in terms of the vocational teacher education program for which they are being used. That is

- What group of competencies must be achieved by **pre-service** vocational teachers pursuing a **baccalaureate degree** in vocational education?

- What competencies are appropriate for vocational teachers pursuing an **advanced degree**?
- What competencies comprise the entry level **professional education core** for persons seeking to meet employment qualifications required by law for **non-degreed vocational teachers**?

When these determinations have been made, a **needs assessment** should be conducted comparing the existing vocational teacher education curricula with the Instructional Goals and Competencies, including the specific performance criteria. Existing curricula and learner competencies should then be reviewed and revised using the results of this assessment.

V. PLANNING FOR VOCATIONAL TEACHER EDUCATION

To plan valid and quality vocational education programs for Florida, the following three questions must be answered:

- What are the present and projected employment demands by type of employment and number of employees for Florida's workforce? What are the employment requirements for new employees and the retraining or upgrading requirements of current employees?
- What vocational education programs and what specific measurable learner competencies will be required to meet the demands for new employees and in-service education for present employees of Florida's workforce?
- What type and scope of vocational teacher education programs will be required to prepare the appropriate number of vocational teachers to staff the level of vocational education demanded for Florida's workforce?

Having addressed these questions, the answers must be reviewed and revised in response to the dynamics of the workforce and knowledge bases affecting the preparation of vocational teachers.

These three questions are interdependent. The answer to question one is required to appropriately answer question two, and the answer to question three requires knowledge of the answers to questions one and two. Partnerships and collaborative relationships between state and local vocational education leaders, government agencies and private sector business and industry will provide the level and range of involvement required to appropriately answer these three questions.

A Holistic Framework

Today, every organization is doing some sort of planning. Planning related questions that should be addressed, include:

- What is planning?
- Why should we plan?
- Are we planning in reaction to current problems and crises? To create a better future society and community? Or both?
- Are we using a valid and appropriate planning model and framework?

Planning identifies where we are going, why we are going, and provides the basic results-related criteria for determining if and when we have arrived at the intended results. We plan in order to create a better future for individuals, groups, the community, and society. The type of planning we do

depends on what we want to achieve. The planning framework will determine who the primary clients and beneficiaries will be for the planned results.

Vocational Teacher Education programs have multiple purposes in today's society.

- To assure that prospective teachers have the skills, knowledges, attitudes, and abilities (SKAA's) to enable vocational education students to be successful in school, on the job, and in life.
- To contribute to the personal growth and development of the future teacher.
- To provide each vocational education teacher candidate the abilities to become self-reliant, self sufficient, and a productive member of society.

Planning for vocational teacher preparation must be done within the broader context of vocational educational planning and the impact successful vocational education programs have on society. Planning at this level must address four key questions (see Figure 4):

- Will the completers of vocational teacher education programs and their learners (completers of vocational education programs) make a positive contribution to creating the world in which we want our children and grandchildren to live?
- How can we assure that the "what should be" skills, knowledges, attitudes and abilities, for effective and efficient teaching (pedagogy), are used as the basis for making decisions about planning, maintaining and renewing vocational teacher education programs to make a positive societal contribution?
- How can the technical content component of the teacher preparation program be planned and maintained to assure its appropriateness for each specific occupational area, both now and in the future?
- How can the basic academic skills requirements for vocational teachers be determined and provided for in pre-service and in-service teacher education programs?

To best answer these questions, a holistic vocational education planning model that employs an implementation strategy which includes the use of partnerships and collaborative working relationship for each specific vocational education area should be used.

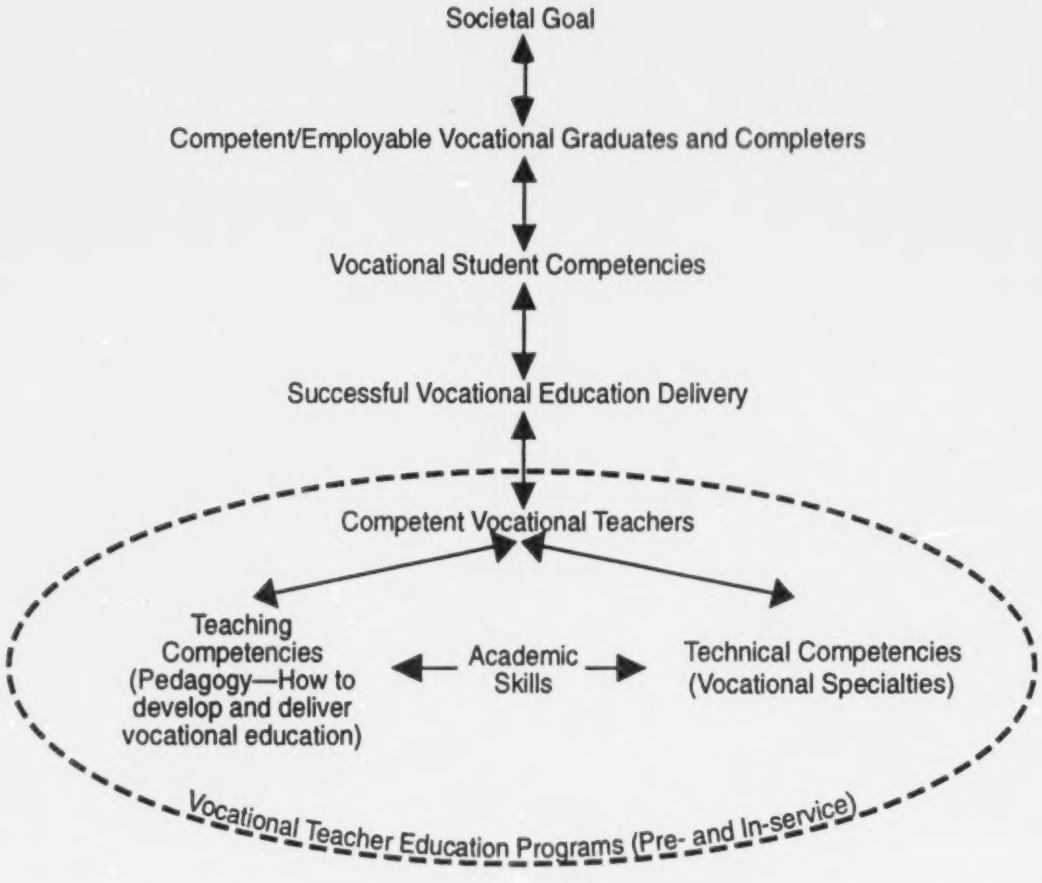
Societal Goal
Competent/Employable Vocational Graduates and Completers
Vocational Student Competencies
Successful Vocational Education Delivery
Competent Vocational Teachers
Teaching Competencies (Pedagogy—How to develop and deliver vocational education)
Academic Skills
Technical Competencies (Vocational Specialties)
Vocational Teacher Education Programs (Pre- and In-service)

Figure 4.
Vocational Teacher Education Planning Framework

Most vocational education planning, including vocational teacher education, is done at the learner/course level. The intent is to provide instruction which will translate directly into marketable skills. The integration of course, program, and curriculum within a framework based on work and personal requirements for living and contributing in the 21st century and beyond is usually addressed informally. However, vocational teacher education planning must achieve such an integration so that vocational teachers will provide their learners with the skills, knowledges, attitudes, and abilities to productively work and contribute as citizens for the coming decades.

In any type of successful planning, efforts should be geared to a firm results-orientation. A results-based planning framework, rather than a resource or process-based approach, allows individuals, groups and organizations to logically and rationally make better decisions, and receive better payoffs in the future.

According to Kaufman (1988, 1992 a,b) there are three types of measurable results:

TYPES OF RESULTS	DESCRIPTION	EXAMPLES
OUTCOMES (MEGA)	The social impact and payoff of results	Individual self-sufficiency, self-reliance, collective social payoffs, etc.
OUTPUTS (MACRO)	Results which can be or are delivered outside to society: quality of contribution(s)	Graduate, certification of completion, licensures
PRODUCTS (MICRO)	Results which are building blocks for larger results	Test scores, courses passed, competencies gained

Table 4.
Three Levels of Results (Modified from Kaufman, 1988, 1992 a,b)

Why is it practical to include mega level outcomes when planning a vocational teacher education program? Vocational teacher educators must be concerned about positive societal outcomes (mega level consequences and payoffs) because vocational teacher education produces teachers who contribute to society by being productive citizens. These future educators will teach other members of the community, who, in turn, will contribute back to society. Why care about societal outcomes? Think -- what would happen if members of society keep taking (through welfare or other public assistance programs) and not giving anything back in return? The community, economy, and everyday living would probably be intolerable if each citizen, according to his or her individual skills and abilities, did not contribute to those who made their education and life possible.

Vocational teacher educators are providing an invaluable service to society by preparing teachers who will assist vocational students to become self-sufficient, self-reliant, productive members of society when they enter the workforce. This is indeed a positive societal spinoff. Vocational teachers who care only about the content of what they teach, and not about how students acquire or use skills and abilities, or about the student's future roles and responsibilities as citizens, will focus on **teaching courses** -- not **developing people**. Therefore, they will be neglecting a significant responsibility of an effective educator. Planning at the mega level (outcomes) assures that

vocational teacher education programs, the lives of program completers, and society will be enhanced (see Figure 5).

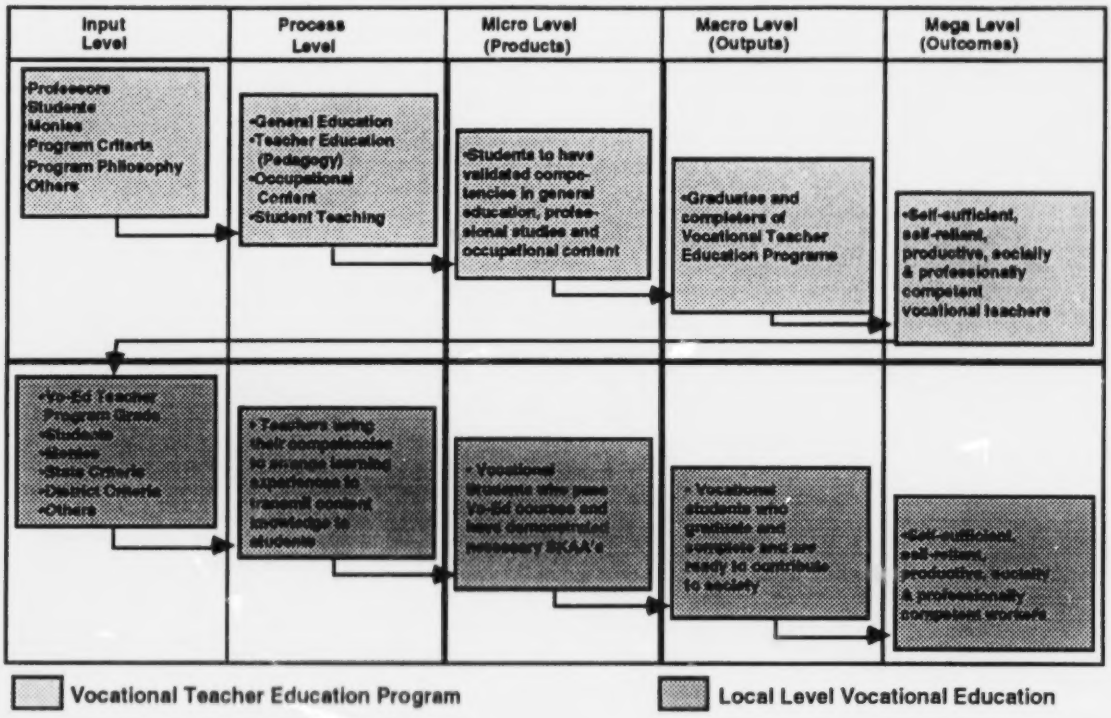
Input Level
Process Level
Micro Level (Products)
Macro Level (Outputs)
Mega Level (Outcomes)
•Professors
•Students
•Monies
•Program Criteria
•Program Philosophy
•Others
•General Education
•Teacher Education (Pedagogy)
•Occupational Content
•Student Teaching
•Students to have validated competencies in general education, professional studies and occupational content
•Graduates and completers of Vocational Teacher Education Programs
•Self-sufficient, self-reliant, productive, socially & professionally competent vocational teachers
•Vo-Ed Teacher Program Grads
•Students
•Monies
•State Criteria
•District Criteria
•Others
•Teachers using their competencies to arrange learning experiences to transmit content knowledge to students
• Vocational students who pass Vo-Ed courses and have demonstrated necessary E/QAA's
• Vocational students who graduate and complete and are ready to contribute to society
•Self-sufficient, self-reliant, productive, socially & professionally competent workers
Vocational Teacher Education Program
Local Level Vocational Education

Figure 5.
A Mega Level Approach to Planning Vocational Education (Modified from Kaufman, 1988)

The Organizational Elements Model: A Planning Framework

The three types of results; **outcomes** (mega), **outputs** (macro) and **products** (micro); identified in Table 4 are elements of a larger framework called the Organizational Elements Model (OEM) (Kaufman, 1988; Kaufman, 1991). The OEM Model (Figure 6) is divided into three major areas: **societal results/impact, organizational or system results**, and **organizational or system efforts**. Societal results/impacts are the final results and consequences of the organization and how it impacts society. Organizational results are the things that are produced within the organization. Organizational efforts are those things that organizations use and do.

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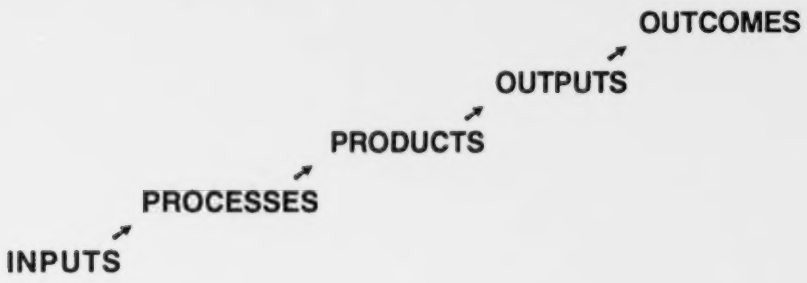
	ORGANIZATIONAL EFFORT		ORGANIZATIONAL RESULTS		SOCIETAL RESULTS
	INPUTS (Raw Materials)	PROCESSES (how to do its)	PRODUCTS (en-route results)	OUTPUTS (aggregated products of the educational system,delivered or deliverable to society)	OUTCOMES (the effects of outputs in and for society and the community).
EXAMPLES	Ingredients; existing human & educational resources; existing needs; goals, objectives; policies; board regulations; laws; money; values; societal & community characteristics; quality of life.	Educational means; methods; procedures; excellence programs; voucher plans; in-service training; teaching; learning; mediating managing.	Course completed; competency test passed; competency acquired; learner accomplish-ments; teacher accomplish-ments; educational building blocks.	Graduates; program completers; job placements; certifiable teachers.	Self-sufficient, self-reliant, productive individual; socially competent & effective; contributing to self & to others; no addictive relationship to others or to substances; financial independence.
RESULTS			MICRO (Internal Organization finished product)	MACRO (Internal organi-zation products ready to deliver to society.)	MEGA (Societal results and impacts)
CLIENTS			Individuals or Small Groups within the School System	School System or School	Society/ Community

Figure 6.
Organizational Elements Model (Modified from Kaufman, 1988, 1991)

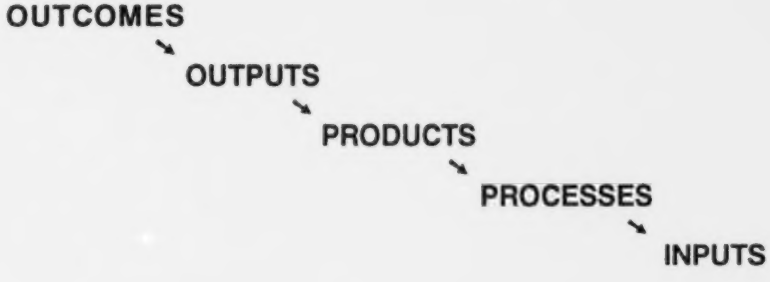
Planning Using the OEM. Planning can begin at several different points. Sometimes planners start with the available resources and processes and then determine how these might best be used to achieve positive results (roll-up planning). In other cases, the initial focus is on the identification of desired results and then alternative ways of accomplishing the objectives are identified and examined (roll-down planning).

Roll-up planning. Most planners work reactively, and "roll up" planning from resources (inputs) to use them to determine methods and means (processes) to be used. Then, they move to course/learner micro level results (products), and then to macro level results such as graduates and completers that are delivered outside the educational agency (outputs). Sporadically, we determine mega level results, the extent to which these people

are self-sufficient and self-reliant (outcomes). This roll-up approach moves from resources up to one or more levels of results:



Roll-down planning. Another approach to planning starts with identifying the societal/community results that are to be accomplished, determining what organizational outputs and individual products are required to achieve the societal outcome, and then deriving the processes and inputs that will produce the desired results. This roll-down approach moves from the three levels of results down to resources:



Both planning tactics are important and useful. When planning to overcome an existing problem, then the roll-up approach is useful. When attempting to avoid problems and create a more successful future, the roll-down approach is vital. Note that both approaches include all five organizational elements: INPUTS, PROCESSES, PRODUCTS, OUTPUTS, AND OUTCOMES.

Many people, unfortunately, have not considered nor recognize the relationships between and among the three types of results shown in Table 1. They fail to differentiate among the relationships between them as well as usually ignoring their linkages. But they are linked, the three results are nested. Products (micro) are contributors to Outputs (macro), which are contributors to Outcomes (mega). If people choose only to address the levels of Products and Outputs, they are assuming that the higher order results, Outcomes, will be satisfactory; indeed, a very risky position to assume! (See Figure 7).

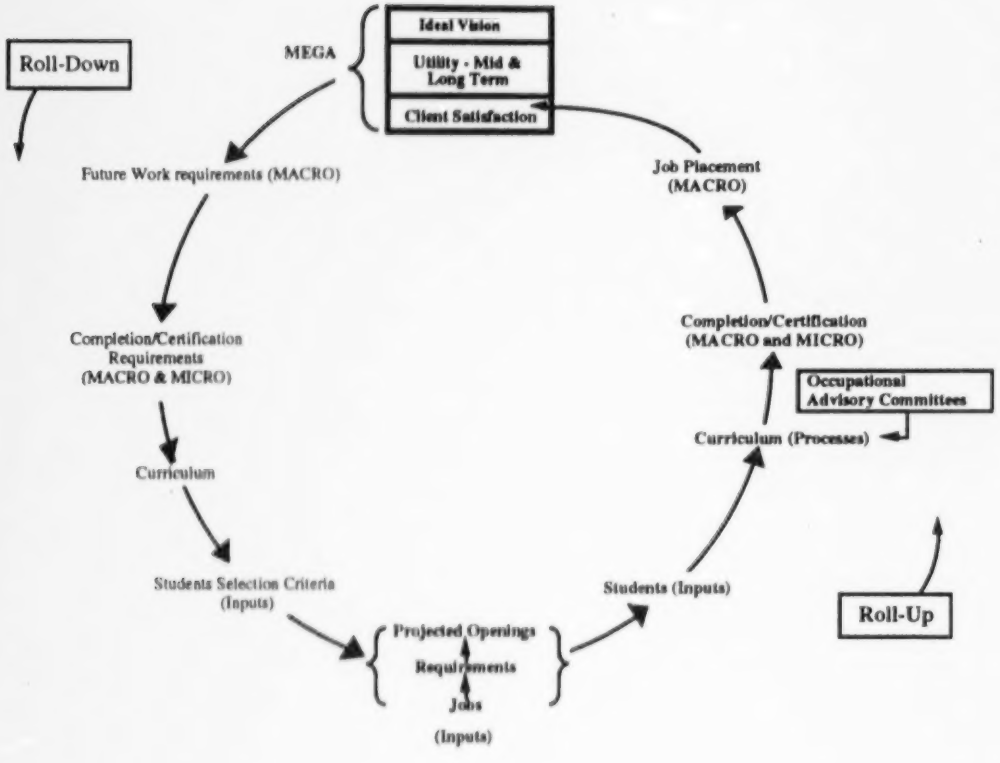


Figure 7.
Two Possible Modes for Defining and Evaluating Vo-ed Teacher Preparation

Asking the Right Questions

To determine the appropriate level of planning for vocational education, state and local educators and leaders should ask and answer the following questions (Kaufman, 1988: Kaufman, 1991):

Type 1 (Mega) Are we to be concerned with the usefulness and contributions that Florida vocational education and educators will deliver (usually through teaching agencies) to those external(outside-the-organization) clients who pay (directly or indirectly) for it? Are we to be concerned with the current and continuing self-sufficiency, self-reliance, and quality of life of Florida citizens in general and vocational education completers/leavers in particular?

Type 2 (Macro) Are we to be concerned with the quality of what the entire vocational education system will deliver?

Type 3 (Micro) Are we to be concerned with the quality of what an individual or a small group within the vocational education organization will produce? Are we to be concerned with vocational learners (including teacher candidates) attaining and demonstrating all necessary skills, knowledges, attitudes and abilities in each of their courses or learning experiences?

Type 4 (Process) Are we to be concerned with the efficiency of the methods and procedures which will be used by an individual or a small group within the vocational education system?

Type 5 (Inputs) Are we to be concerned with the availability and or quality of resources which will be used by an individual or small group within the vocational education system?

Type E (Evaluation) Are we to be concerned with the value and worth of vocational delivery methods? Are we to be concerned with the extent to which objectives have been attained?

Figure 8 illustrates the relationship between the type of question to be asked, and the type of results to be targeted based on the OEM as shown in Figure 6.

QUESTION TYPE	*OEM MODEL TYPE OF RESULTS*
Type 1 Question	<----------> OUTCOMES/MEGA
Type 2 Question	<----------> OUTPUT/MACRO
Type 3 Question	<----------> PRODUCT/MICRO
Type 4 Question	<----------> PROCESSES
Type 5 Question	<----------> INPUT
Type E	<----------> (EVALUATION)

Figure 8.
Planning Questions Related to the OEM

If we are really concerned about achieving positive measurable results from our planning -- and getting it right the first time, we have to address all of the questions. If we are concerned with the usefulness and contributions of an entire vocational education system, we should answer all the questions. Whether we formally recognize it or not, each question is related to all the others. A linkage, or Results Chain, exists between all of these elements. If there is a temptation to ignore a question, it may be useful to re-evaluate the desired results and ask *"Who is really the client and beneficiary of our planning and its consequent results?"*

Results Chain

Individuals, groups, and/or organizations can do holistic vocational teacher preparation program planning, that is, planning for each type of result. Or, they may plan for only one or two types of results. For instance, planning could be directed toward graduation or program completion, or could focus on one or two individual courses. However, it should be noted that those involved in planning are not only personally accountable for the resulting plan, they will also be held accountable for the societal impact that results from the plan.

In order to get the "big picture", the following results chain (Figure 9) should be kept in mind.

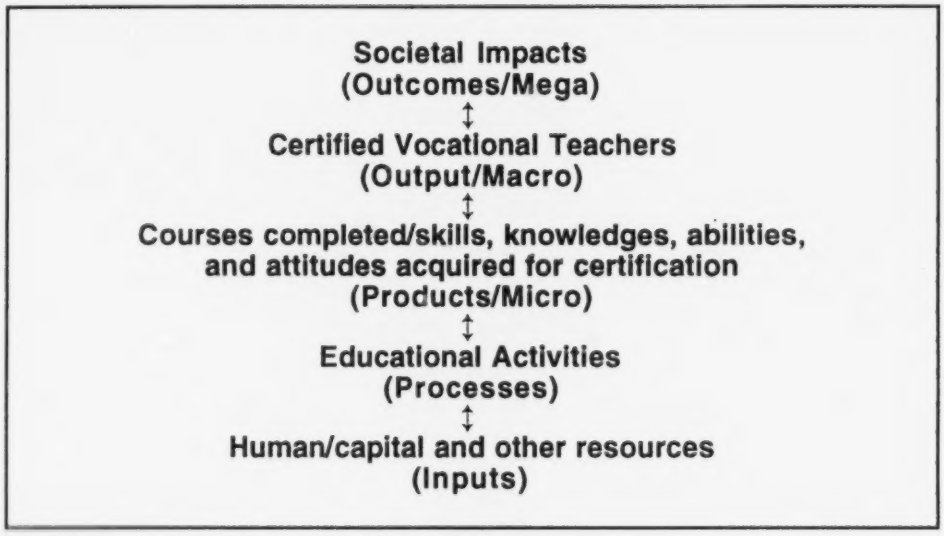


Figure 9.
Results Chain for Vocational Teacher Preparation Programs (based on Kaufman 1988, 1991)

Notice the two-way arrows which connect the OEM components in the results chain. If there are any problems with the "fit" between any of the components (arrows that are partially missing or not complete) the entire system is at risk. When there is integration of the levels, then efficient and effective educational consequences are most likely to happen (especially if we have chosen the correct Outcomes in the first place).

Mega, Macro, Micro: Identifying Beneficiaries

In addition to distinguishing between the three levels of results, the OEM model also recognizes different beneficiaries for each level. When an organization implements a plan, three potential beneficiaries can be identified:

- the individuals or small groups within the organization (Micro)
- the organization itself (Macro)
- the society/community that the organization serves (Mega)

The individual or small group as a client (micro level planning). Vocational education organizations as well as other organizations are made up of individual people. Often an individual or small group, or issues related to them, become the primary focus and beneficiary of planning. Vocational organizations may target their planning efforts on students and the courses they take, their test performance, individual teachers or a vocational department.

The organization as a client (macro level planning). Most so called "strategic planning" approaches make the assumption that the organization's survival is the ultimate goal and that all planning should be devoted to this goal. In vocational education teacher preparation programs, this mode of planning aims at the terminal learner performance; i.e. successful completion of courses, graduation, and certification. The underlying focus and concerns tend to be on making the in-place system more secure and successful, not necessarily for the good of the student, community, and or society.

The society as a client (mega level planning). Until recently, this approach to planning was hardly ever considered, because educational organizations could not see the linkages between outcomes (mega), outputs (macro), and products.(micro) This planning strategy concerns itself with society being the primary focus and beneficiary. Planning in this mode begins with identifying current and future opportunities, visions, and requirements, in this case the educational requirements for contributing to the societal good. Planning on the basis of that which is good for society is also good for the organization and its people.

Objectives.: For what? Knowing where we want to go, and for what purpose, is not a casual choice (Kaufman and Thiagarajan, 1987). We may choose to:

- rely on what is currently happening, simply "go with the flow," or go were others say to go.
- select a new destination and create a new "What should be"
- keep what is successful and change what is not.

A process called *needs assessment* is a useful method for identifying, defining, and justifying items such as (b) and (c).

Identifying Needs, not Wants. Means, ends, wishes, wants, needs -- it is very important to distinguish the difference between these words. We have to distinguish between ends and means, and then relate them appropriately. Conventional usage blurs the distinction--we usually jump right into solutions before we identify where we are going, and why:

"We *need* better trained vocational teachers!"
"We *need* better resources to help our educational systems out!"

How many times have we heard statements such as this? Many educators only address processes and resources ("better trained teachers," "better resources") first without defining the gaps between current results and required results. Consider these two statements again:

"We *need* better trained vocational teachers!"
"We *need* better resources to help our educational systems out!"

In these two statements we have already chosen a solution (an input or process) before knowing what gaps exist between the current results and the required ones. Whenever we use the word *need* as a verb, we eliminate other "means" options... we are prescribing the solution without clearly defining where we should be headed, and why we should go there. This is like sailing a yacht with no compass or charts, but buying a higher horsepower engine to "get there faster."

In the planning world, a *need* is defined as a gap between "what is" (current results) and "what should be" (the optimal desired results). Wants and wishes are usually related to means or processes, the how-to-do-it's. The following terms can be important in grasping the big picture for successful holistic planning... and developing for Florida a vocational education program including a vocational teacher preparation program which will be successful and make the appropriate contribution.

NEED - Gaps in ends or results between "what is" and "what should be." A need may be identified at any or all of the three levels of results: outcome, output, product.

PROBLEM - A need selected for reduction or elimination.

NEEDS ASSESSMENT - The process of identifying needs, placing them in priority order, and selecting the most important for reduction or elimination.

END - Measurable results, contributions, and accomplishments.

MEANS - Methods, resources, processes, procedures, how-to-do-its.

WANTS (or WISHES) - Preferred or valued means.

Recall that a *need* is the gap between "what is" and "what should be" in terms of measurable results. The three levels of results are outcomes, outputs and products. Notice again, that a need is a measurable gap between "what is" and "what should be" on the three result levels of outcomes, outputs, and products (Figure 10). Notice the gray arrows. These represent "quasi-needs" -- that is, wants or wishes. Unfortunately, most educators and so called strategic planners work at these two levels.

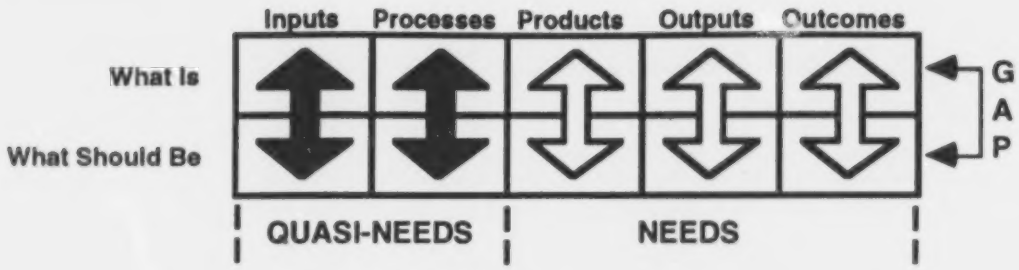


Figure 10.
OEM as a Two-Tiered Framework (Kaufman 1988, 1992 a,b)

Sometimes planners consider only the "what is." In this situation, efforts focus on gaps or deficiencies in existing inputs, processes, products, outputs and outcomes. Planning that addresses only the "what is" falls into the category of needs analysis. Needs analysis is reactive, it reacts to existing problems and tends to support the status quo. It does not allow the planner to go beyond existing products, outputs or outcomes to create a plan for new results. If planners address the gap between the "what is" results and the "what should be" results, a needs assessment is produced. The difference in needs analysis and needs assessment is depicted in Figure 11.

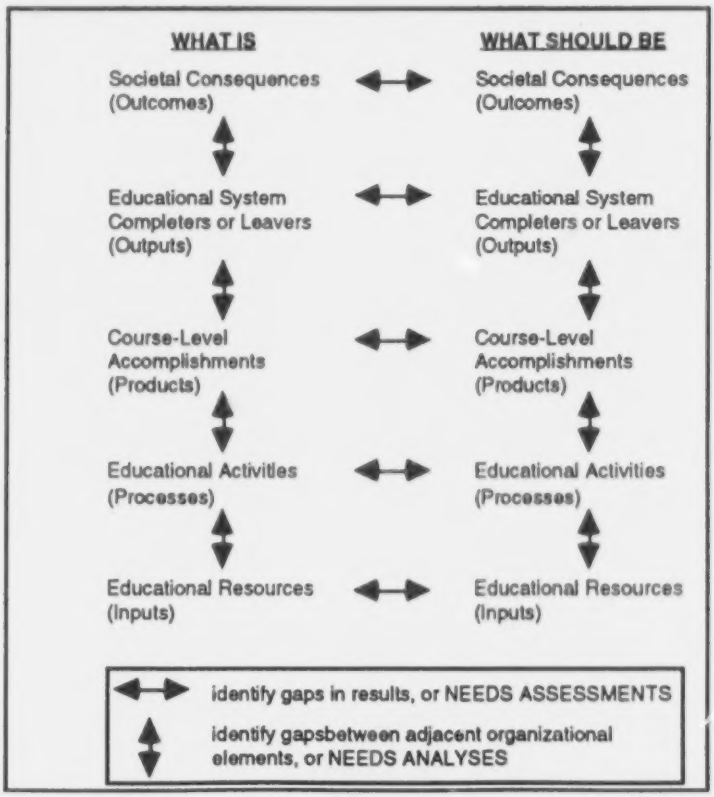

WHAT IS
WHAT SHOULD BE
Societal Consequences (Outcomes)
Societal Consequences (Outcomes)
Educational System Completers or Leavers (Outputs)
Educational System Completers or Leavers (Outputs)
Course-Level Accomplishments (Products)
Course-Level Accomplishments (Products)
Educational Activities (Processes)
Educational Activities (Processes)
Educational Resources (Inputs)
Educational Resources (Inputs)
identify gaps in results, or NEEDS ASSESSMENTS
identify gapsbetween adjacent organizational elements, or NEEDS ANALYSES

Figure 11.
Needs Assessment Compared to Needs Analysis (From Kaufman, 1988, 1992 a,b)

An Implementation Strategy

Although education officials must provide the training for potential vocational education teachers, the results of their efforts are nested within a broader societal framework. Therefore, planning must include the views of those concerned individuals representative of the greater societal framework. **Partnerships and collaborative relationships** is a strategy which provides for this level and range of involvement.

Three documents central to the planning, implementation and evaluation of Florida's education, including vocational education, are:

- *Blueprint for Career Preparation* (updated copy)
- *Blueprint 2000: A System of School Improvement and Accountability*
- *SCANS Reports.*

Florida's *Blueprint for Career Preparation* (updated copy) identifies a mission based on Florida's future economic growth and the educational requirements for a well prepared workforce. Expectations along with goals are developed to achieve the Blueprints mission: to address the increasing gap between emerging job requirements and the ability of Florida's workforce to meet them.

Blueprint 2000 -- A System of School Improvement and Accountability was approved by the Florida State Board of Education on October 6, 1992. This document provides a different state initiative for school reform. Processes or programs at local schools and school districts are no longer dictated by state policy. Progress toward meeting the rigorous standards and outcomes presented in *Blueprint 2000* are now state requirements.

SCANS Reports -- At the national level, the U.S. Secretary of Labor appointed a commission to define the know-how required in the work place and to consider how this know-how is best assessed. This commission is known as the Secretary's Commission on Achieving Necessary Skills (SCANS). The reports and work products produced by this commission are identified and referred to as the SCANS reports.

Adoption of these three documents commit Florida education to specific expectations for students which are defined and described. To achieve this, **Florida's vocational education program**, including the **preparation of vocational teachers** (and perhaps all teachers) -- both pre-service and in-service -- must be reviewed, up-dated and aligned to assure that teachers are qualified to plan, deliver, and evaluate instruction appropriate for students. To meet this challenge, state and local educational leaders should adopt the practical and responsive **holistic planning framework** described in this report and the **implementation strategy** that involves appropriate **partnerships and collaborative working relationships** as described in Figure 12.

Partner[1]	Purpose of Partnership
University Colleges & Departments	To assist faculties and administrators • to develop an understanding of and commitment to the **professional teaching competencies** and the scope and degree of **technical content knowledge and skills** required by teachers in the specific occupational teaching areas; to plan, implement and evaluate effective programs of vocational education • to establish appropriate course and program content and learning objectives in **general education, professional teaching competencies** and **technical content competencies** to meet required semester hours for the specific occupational areas.
Local Educational Agencies	To participate with local administrators and faculties responsible for planning, implementing and evaluating Vocational Education programs, services and activities • to get feedback on the **effectiveness of vocational teachers** for use in improving vocational teacher education • to understand the **scope and nature of in-service education requirements** for vocational teachers and administrators. • to establish **quality internship programs**
Governmental Agencies: Local, State & Federal	To establish communications with those governmental agencies that have **useful information**[2] and/or can provide **useful assistance**[3] which will enhance the quality of vocational teacher education in a specific occupational area.
Private Sector Business and Industry	To establish communications with those private sector business and industry organizations and representatives that have **useful information**[2] and/or can provide **useful assistance**[3] which will enhance the quality of vocational teacher education in a specific occupational area.

[1]Specific partners are identified for each of the partnership categories, on the basis of the specific vocational area.

[2]Useful information includes the characteristics of the current and future world, the work place, job skills and knowledge requirements, and trends and issues.

[3]Useful assistance includes curriculum/course design, creation of instructional materials, provision of in-service programs & other opportunities, & recruitment of students for vocational teacher education.

Figure 12.
Vocational Teacher Education Partnerships & Collaborative Working Relationships

VI. RESTRUCTURING FLORIDA'S VOCATIONAL TEACHER EDUCATION

Overview

This project by design has involved and encouraged a broad representation of concerned groups and individuals to share their vision, information and concerns about vocational education, specifically vocational teacher education. Broad based involvement is important and significant when examining performance and preparation and future work requirements for vocational educators. Educators preparing vocational teachers who, in turn, will assist vocational students in preparing for employment must recognize that the responsibility is greater than just preparation for work. Society is best served when vocational teachers preparing students for employment give equal value to preparation for living. Local vocational programs and vocational teacher education can be planned, renewed and enhanced provided they are both addressed as integral and significant parts of vocational education.

High and worthy educational expectations for Florida Vocational Education are set forth in three state adopted documents: *Blueprint for Career Preparation, Blueprint 2000: A System of School Improvement and Accountability* and the *SCANS Reports*. Additionally, the concerns and expectations of the private business and industry sector is described and reported in a variety of reports and articles such as *Workforce 2000* and the *Cornerstone Report*.

How can these expectations for individual students preparing to enter and advance in the workforce be realized? How can the concerns of the business and industry community be effectively addressed? How can vocational education contribute to the desired quality of the society, now and in the future? Educational leaders and policy makers at the federal, state and local level must address these questions, plus many others. This challenge involves establishing and maintaining the legal framework in law and agency policy to guide the decision making process and support implementation activities in education including vocational education.

The **instructional goals** and **learner competencies** developed and validated by Florida's vocational teacher educators as part of this project identify the **professional education** skills, knowledge, attitudes and abilities (SKAAs) that should be acquired by vocational teachers as part of their pre-service or in-service training. As such, these goals and competencies can be viewed as an extension of the *Blueprint* and *SCANS* documents to vocational teacher education. The *SCANS Reports* recommend competencies required for successful entry into the workforce. The *Blueprint* represents Florida's implementation of these competencies at the K-12 level. The VTEP-developed **instructional goals** and **learner competencies** augment this concept by identifying the competencies required of prospective vocational teachers for

them to efficiently deliver effective vocational education programs. The parallel relationships between the validated **professional** vocational teacher education competencies, the *Blueprint* and the *SCANS* competencies for learners preparation to enter the workforce are denoted in Appendix H.

Quality vocational teachers enhance the potential of quality vocational education programs. Therefore, the integral relationship between vocational teachers SKAAs to plan and deliver vocational programs that effectively and efficiently assist students to learn and develop occupational SKAAs that result in their employment and becoming self-sufficient members of society cannot be ignored. Some perceive that this relationship has not been given adequate recognition by educational leaders and decision makers.

John Goodlad (1990) validated these concerns about the "failure to connect teacher education and schooling" in a comprehensive five year study on the Education of Educators. This study examined whether teacher education programs were pursuing a mission based on expectations society has for teachers, and whether those programs were linking teacher preparation to a conception of what teachers do and should do. The answer to these questions was no, leading Goodlad to conclude "the necessary conditions for vigorous, coherent, and self-renewing programs of teacher preparation are not in place" (p. 186).

Direction for development of the appropriate vision and philosophy to guide vocational education including vocational teacher education should be provided by the ideal vision for Florida and the related mission for Florida education. In any case, the vision and philosophy (basic beliefs) that guide decisions made about vocational education programs must also under gird and direct the vocational teacher education program. Therefore, by definition, vocational education should include vocational teacher education, both pre-service and in-service.

Delivery Models

Florida provides two delivery models for the preparation of individuals to teacher vocational education. One is the **Baccalaureate Degree model**. The other, the **Non-Degreed Teacher model**, is a provision in law for employing experienced workers from business and industry, who, after employment, must complete professional education training in identified areas of professional study.

These two strategies for vocational teacher education are valid and appropriate. They should be continued with some **reform** and **restructuring**.

Baccalaureate Degree

Degreed vocational teacher education programs are presently available

for the subject areas of agriculture, business education, home economics, industrial arts, technology education, and marketing. These are baccalaureate degree programs for the preparation of beginning teachers. Degreed vocational teachers receive a state issued Professional Certificate.

Certification requirements for beginning degreed vocational teachers are expressed in the number of semester hours credit to be completed in each of three broad areas of study. The areas are **general preparation**, forty-five (45) semester hours; **professional preparation**, twenty (20) semester hours; and at least thirty (30) semester hours in the certification **specialization area**.

Florida State Board of Education (SBE) Rule 6A-4.052, Florida Administrative Code (FAC) sets forth the detailed requirements for the **degreed vocational teacher** in the **general preparation** forty-five (45) semester hours and the **professional preparation** twenty (20) semester hours. A separate State Board of Education rule sets forth the detailed requirements for each of the **specialization content areas** of at least thirty (30) semester hours[7].

Programs of study to meet semester hour credit requirements are made up of courses in specific subject areas. Semester hours of credit are assigned to the courses which have been identified to meet the semester hour requirements specified in State Board of Education certification rules. Specific competencies addressed by the courses are determined by the individual university faculties teaching the course. **Similarities of competencies** may be found between programs at the various universities. However, **state adopted, field-validated competencies** determined to be **essential** for effective and efficient teachers are not available for correlation with the competencies taught by the individual universities.

Reforms and restructuring of the degreed vocational teacher education program are recommended for student selection, curriculum (including practicums and internships), practical work experience and beginning teacher assistance.

Student Selection. Students should be recruited and admitted to the program based on carefully developed standards and criteria that assure their ability and aptitude to master the knowledge base for effective teaching.

Curriculum. **Instructional goals** and **learner competencies** for the general preparation, technical content and professional preparation categories should be developed and maintained by involving appropriate representatives from the education and other public and private sectors appropriate to the vocational teaching area in a collaborative working relationship.

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[7]For agriculture, SBE rule 6A-4.054, FAC; business, SBE rule 6A4.056, FAC; home economics, SBE rule 6A-4.058, FAC; industrial arts-technology, SBE rule 6A-4.060, FAC; and marketing, SBE 6A-4.062, FAC.

General preparation and the **technical content** courses and instructional activities should be designed and scheduled cooperatively by vocational teacher education faculty and faculty from other appropriate disciplines. This part of the curriculum should be carefully planned and scheduled to assure students will have available a **logical** and **meaningfully sequenced** program rather than **randomly selected** or **non-integrated** courses.

Professional preparation curriculum should be planned using the field validated instructional goals and learner competencies developed by this project. Courses, seminars, practicums and the internship planning and methodology should involve and reflect the **technical content** of the specific vocational offering to be taught. In addition to courses and seminars on campus, carefully planned and scheduled practicums and observations that require going to the classrooms and laboratories of local schools should be required. This will provide opportunities for students on a continuous basis to make application and evaluations of the learning experiences on campus prior to the extended internship.

Teaching internships should be in local educational institutions where the district and institutional leadership understand and are committed to the preparation of quality teachers. The internship must be jointly planned, implemented and evaluated by vocational teacher education faculty and local leadership. Front line supervision and mentoring must be provided by a vocational teacher who meets carefully developed criteria for **master teachers**. **Intern teachers** should function as, and be recognized, as **vocational teacher educator field-based faculty**.

Practical work experience. Practical experience on the job in work related to the teaching area is very important. This is difficult to achieve as a part of the degreed program. The opportunity for part-time work or planned employment internships in a business or industry should be made a part of the vocational teacher education curriculum requirement.

Beginning teacher assistance. Degreed vocational teachers should be provided technical assistance for the first year of teaching. This assistance should be provided by **itinerant** vocational teacher education faculty or **master vocational teachers** serving as **field based** vocational teacher education faculty. The first year teaching is a critical year. Therefore, first year teachers should be given assistance and support that will help them become successful teachers.

Non-degreed

Section 231.1725, Florida Statutes, 1992 provides authority for school districts to employ part-time and full-time non-degreed teachers of vocational education. Qualifications for employment are prescribed for non-degreed teachers of vocational education in the areas of agriculture, business, health occupations, home economics, industrial, marketing and public service

education. Individuals are approved for this program primarily on the basis of six years of documented successful occupation experience in the teaching area, a high school diploma or the equivalent, and completion of professional education training in teaching methods, course construction, lesson planning and evaluation, and teaching special needs students.

The **professional education requirements** may be completed through coursework from a standard institution or an approved district teacher education program.

The courses which make up the program of study and learning activities to meet the requirements for completion of the **professional study areas** are the responsibility of **each** school district. The law does not specify the number of semester hours of credit or the learner competencies for the respective professional education areas of study. As with the degreed program, specific competencies in each area are determined by those who teach the courses or conduct the learning activities. Similarities of competencies may be found between programs approved by the respective school districts. However, field-validated professional competencies essential for effective and efficient teaching are not available for use in planning and evaluating this program.

The non-degreed model can be a very successful strategy to attract qualified and motivated individuals into teaching from employment in business and industry. However, an individual who meets these non-degreed vocational teacher employment requirements will not receive a state issued teaching certificate.

Reforms and restructuring of the non-degreed vocational teacher education program are recommended for documentation of employment experience, professional preparation curriculum, and continued employment.

Documentation of Employment . Completion of an appropriate technical competency test plus documentation of the six years full-time employment experience now required should be used to validate technical content (SKAA's) in the teaching area.

Professional Preparation Curriculum . The professional curriculum for non-degreed vocational teachers should be planned by a **team** of **vocational teacher educators** and **field based vocational teacher education faculty representative** of the vocational teaching areas now authorized in law to employ non-degreed teachers.

This team should use the **degreed teacher** professional instructional goals and learner competencies to identify **initial critical or core competencies** to be learned by a beginning **nondegreed teacher**. The **initial critical competencies** should relate to the areas of (1) teaching methods, (2) classroom management, (3) curriculum development and

instructional techniques (4) working with special needs students (5) cultural differences, gender and equity biases and (6) evaluation of student progress.

The **professional preparation curriculum** should be planned, taught and evaluated throughout the state by vocational teacher education faculty and field based teacher education faculty. Courses and other instructional activities used to deliver the professional preparation curriculum should be approved for college semester hour degree credit toward a baccalaureate degree.

Continued Employment. Upon successful completion of the **initial critical core competencies**, opportunity should be provided for the **non-degreed teacher** to complete the **professional competencies** required of the beginning degreed teacher within a specific time frame and receive a **baccalaureate degree**. This should be a requirement for continued employment.

VII. RECOMMENDATIONS

Based upon the information and findings included in this report, a number of recommendations have been developed to enhance the transformation and restructuring of Florida's vocational education program with an emphasis on teacher education.

1. Legally define vocational education as a state program which includes vocational teacher education.

2. Develop a comprehensive, statewide vocational education data base to collect valid and reliable information on the scope, condition, effectiveness and requirements (supply and demand) for vocational teachers. Use these data to plan for and make decisions about vocational education and vocational teacher education.

3. Adopt the holistic planning model described in this report to plan and evaluate Florida's vocational education program, including vocational teacher education. This holistic model employs implementation strategies that include the use of partnerships and collaborative working relationships appropriate for each specific vocational area. To expedite the implementation of this recommendation take the following action:

   a. Establish State Board of Regents policy requirements that partnerships and collaborative working relationships be implemented. The policy should specify that when two or more universities are preparing teachers for the same occupational area the policy will be jointly and cooperatively planned and implemented, by the universities involved. This is necessary to minimize for quality assurance of practice and to minimize unwarranted duplication of links with public and private-sector partners outside the university system.
   b. Establish in law the requirement that state department of education, school districts, community colleges, and other appropriate local and state governmental agencies cooperate and participate in planning vocational education.
   c. The State Board of Education should encourage, by resolution, cooperation and involvement of private sector business and industry and organizations in planning vocational education.

4. Adopt the field validated Instructional Goals and Learner Competencies reported in this study as the professional preparation requirements for Florida's vocational teacher education programs (degreed teachers, pre-service and advanced degrees; and non-degreed).

5. Systematically evaluate the pre- and in-service vocational teacher education delivery models presently used to prepare degreed and non-degreed vocational teachers to determine program effectiveness and efficiency. Use the results of the evaluation as a basis for making program revisions or modifications in existing delivery models and assessing the feasibility of implementing new delivery models.

6. Implement and maintain a state vocational education research and development function to address problems and issues identified, described and prioritized for funding by school districts and community colleges, vocational administrators, vocational teacher educators and vocational teachers. Involve specific vocational program area personnel (e.g., business, agriculture, marketing, home economics, etc.) in conducting funded projects.

7. Establish, review and revise degreed vocational teacher certification and non-degreed teacher employment requirements using validated teacher performance competencies.

8. Develop and adopt for statewide use criteria and procedures for the identification and selection of master teachers of vocational education to work with vocational teacher educators in the pre-service and in-service programs for degreed and non-degreed vocational teachers as field based vocational teacher education faculty..

9. Involve vocational teacher educators, field based vocational teacher education faculty and committed school administrators in the planning, implementation, supervision and evaluation of internship programs for degreed vocational teacher candidates and the professional education program for non-degreed vocational teachers

10. Require non-degreed vocational teachers to earn, in a specified time period, as a condition of continued employment, a baccalaureate degree by completing the professional competencies required of the beginning vocational education teacher.

11. Require each state university that offers a vocational teacher education program (pre-service and in-service) to conduct a needs analysis of the courses presently being offered to determine if there are gaps between current practice and "what should be" as identified in state adopted, field validated learner competencies (pedagogy) for those preparing to teach vocational education.

12. Establish State University System guidelines and procedures for the recruitment, evaluation and selection of faculty to administer and teach vocational teacher education. Validated knowledge bases in pedagogy and the specific vocational teaching area should be the criteria used to develop these guidelines.

Benefits

When these reform and restructuring recommendations are successfully implemented, local vocational educators and administrators and vocational teacher educators can expect the following benefits:

- Assurance that the State University System, working collaboratively with local education agencies, will be preparing competent, effective, efficient, and successful vocational educators -- pre-service and in-service.
- Local educational agencies will have valid knowledge base criteria to use when recruiting and employing vocational teachers.
- Local educational agencies will have valid learner competencies to use in assessing the in-service education requirements of their vocational teachers for use by vocational teacher educators to plan in-service courses and schedules.
- The contribution that Florida's vocational education program makes to the preparation of individuals for rewarding employment and success in life will be enhanced, thus making a positive impact on the collective success of Florida's citizens and business and industry.

A Final Thought

The findings and recommendations of this study can, if implemented with commitment and consistency, provide a positive return-on-investment for Florida. By using this data for restructuring, major positive changes and results will be reaped.

It is strongly suggested that any serious commitment to reform and restructure of Florida Vocational Education, including vocational teacher education, include a detailed study of at least the following references in addition to this report.

- Florida Commission on Vocational Education, *Florida's Vocational Education System: Toward the Year 2000* (1986)
- Lynch and Griggs, *Vocational Teacher Education: A Context for the Future* (Lynch and Griggs (1989, Appendix I)
- Goodlad, *Better Teachers for Our Nation's Schools* (1990)

In addition, this study provides the basic data for -- using Deming's term -- the transformation of Florida vocational education. We urge that additional work be initiated to study the basic understandings, vision and missions of vocational education and derive a strategic plan for vocational education. By doing so, Florida's future will be better assured by identifying future requirements and future destinations instead of simply taking today's realities and projecting them, no matter how efficiently -- into the future.

VIII. SELECTED BIBLIOGRAPHY

Center on Education and Training for Employment. (1989). *Resource person's guide to using performance-based teacher education materials* (2nd ed.). Columbus, OH: James B. Hamilton.

Dick, W., & Carey, L. (1989). *The systematic design of instruction* (3rd ed.). Glenview, IL: Scott, Foresman.

Florida Administrative Code. (1992). Tallahassee: State of Florida.

Florida Chamber of Commerce. (1989). *The Cornerstone Report: Foundations for economic leadership* . Tallahassee, FL: SRI International.

Florida Commission on Education Reform and Accountability. (1992). *Blueprint 2000: A System of School Improvement and Accountability. Tallahassee, FL:* Florida Department of Education.

Florida Commission on Vocational Education. (1986). *Florida's vocational education system: toward the year 2000.* Tallahassee, FL.

Florida Council on Vocational Education. (1990). *The status of vocational educator availability in Florida.* Tallahassee, FL: Florida Department of Education.

Florida Department of Education. (1991). *Blueprint for Career Preparation* (updated copy). Tallahassee, FL: Florida Department of Education.

Florida Department of Education. (1992). *Trends in the supply of new teachers in Florida.* Tallahassee, FL: Florida Department of Education.

Florida Education and Training Placement Information Program. (1992) *The Florida employer opinion survey annual report* . Tallahassee, FL: Florida Department of Education.

Florida Statutes. (1992). Tallahassee, FL: State of Florida.

Gage, N. L. (1984). What do we know about teaching effectiveness? *Phi Delta Kappan, 66,* 87 - 93.

Goodlad, J. I. (1990). Better teachers for our nation's schools. *Phi Delta Kappan, 72* , 184 - 194.

Governor's Select Committee. (1990). *Workforce 2000 : Choices for Florida's future* . Tallahassee, FL: Florida Department of Labor and Employment Security.

Hodgkinson, H. L. (1988). *Florida: The state and its educational system* (Research report ISBN 0-937846-76-7). Washington, DC.: Institute for Educational Leadership.

Kaufman, R. (1988). *Planning educational systems: A results-based approach* (4th ed.). Lancaster, PA: Technomic Publishers.

Kaufman, R. (1992a). *Strategic planning plus.* Newbury Park, CA: Sage.

Kaufman, R. (1992b). *Mapping educational success: Strategic thinking and planning for school administrators.* Newbury Park, CA: Corwin.

Kaufman, R., & Herman, J. (1991). *Strategic planning in education: Rethinking, restructuring, revitalization.* Lancaster, PA: Technomic Publishers.

Kaufman, R., Knight, M.R., Andrews, M. T., Bogusch, B., Braziel, D., Johnson, M., & Ward, M. J. (1978). *Needs assessment for vocational educators in Florida.* Tallahassee, FL: Center for Needs Assessment and Planning.

Kaufman, R., & Thiagarajan, S. (1987). Identifying and specifying requirements for instruction. In Gagne, R. M. (Ed.), *Instructional technology: Foundations.* Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Kaufman, R., & Zahn, D. A. (1993). *Quality management plus: The continuous improvement of education.* Newbury Park, CA: Corwin.

Lynch, R. L. (1991). Teaching in the 21st century. *Vocational Education Journal, 66* (1),.28-29, 59.

Lynch, R. L., & Griggs, M. B. (1989). *Vocational teacher education: A context for the future.* Berkeley, CA: University of California, National Center for Research in Vocational Education.

Mager, R. F. (1975). *Preparing instructional objectives* (2nd ed.). Belmont, CA: Pitman Learning.

Naisbitt, J., & Aburdene, P. (1990). *Megatrends 2000: Ten new directions for the 1990's.* New York: William Morrow.

National School Boards Association Report. (1988). *A national imperative: Educating for the 21st century.* Alexandria, VA: J. Howe.

Perry, N. (1989). The new, improved vocational school. *Fortune, 119* (12), 127 - 138.

Poole, V. A., & Zahn, D.K. (1989). Restructuring secondary vocational education: A proposal. *Vocational Education Journal , 64* (4), 39-40, 49.

Secretary's Commission on Achieving Necessary Skills. (1992). *Learning a living: A blueprint for high performance.* Washington, DC.: United States Department of Labor.

Secretary's Commission on Achieving Necessary Skills. (1991). *What work requires of schools.* Washington, DC.: United States Department of Labor.

Appendix A
Advisory Committee Representation Matrix

CONSTITUENCIES and SUBJECTS for REPRESENTATION

ADVISORY COMMITTEE MEMBERS	COE faculty	Vo-ed teachers, present and future	V0-ed teacher education programs	Pre- and In-service resources	Certification requirements	Instructional systems resources and development	V0-ed curriculum resources and development	Curriculum standards	Curriculum design	Curriculum renewal	Vo-ed administration	Personnel selection, retention, and assessment	Administration of guidance / counselling	Guidance and counselling	Outreach programs	Vo-ed youth organizations	Local enrollment	Completion certification for students	Basic skills	Standards and compliance	Placement and follow-up	Program review, Projects and Activities	DVACE relations	Community / Business relations	Legislative relations	Community colleges	Coordination / integration with other programs
Dean of COE (1)	•		•	•		•			•																		•
Vo-ed Teacher Educators (2)	•	•	•	•		•	•		•							•							•				
Local Director (3)		•		•	•		•	•			•	•			•	•	•	•		•	•	•	•	•		•	•
Secondary Principal (3)		•		•				•				•	•	•		•	•	•	•	•	•	•		•		•	•
Area Vo-Tech Center Director (3)		•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•
Occupational Dean (4)		•		•	•		•	•			•	•			•	•	•	•		•	•	•		•	•		•
Bureau Chief - Prgm & Staff Development (5)	•	•	•	•	•	•	•	•	•	•	•				•	•		•		•	•	•		•	•		•
Bureau Chief - Career Development (5)									•				•	•			•						•	•	•	•	•
Division of Public Schools (6)	•			•									•	•			•		•					•		•	•
Division of Community Colleges (6)		•	•	•	•	•	•	•	•	•	•	•			•			•		•	•	•	•	•		•	•
Division of Human Resources (6)	•	•	•	•	•							•													•		
Vo-ed Teacher (7)	•		•		•											•											

Member key:
= representative of this organization
(1) Colleges of Education
(2) Teacher educators
(3) School districts & area vocational technical centers
(4) Community colleges
(5) DVACE
(6) Department of Education
(7) 1st or 2nd year teacher, graduate of a Florida program

Appendix B
Advisory Committee Members

Dean of COE
William Katzenmeyer, University of South Florida (1989-1990)
Robert Lathrop, Florida State University (Phases 1990-1993)

Vo-ed Teacher Educators
Carl Beeman, University of Florida (1989-1993)
Steve Sorg, University of Central Florida (1989-1993)

Local Director
Fred Schollmeyer, Dade County (1989-1993)

Secondary Principal
Virginia Massey, Leto High School (1989-1993)

Area Vo-Tech Center Director
Horace McLeod, McFatter Vocational Technical Center (1989-1993)

Occupational Dean
Dan McKinnon, Santa Fe Community College (1989-1993)
Ann Southerland, Pensacola Junior College (1989-1993)

Bureau of Programs and Staff Development, DVACE
Patsy Agee (1989-1990)
Pat Hall (1990-1993)

Bureau of Career Development, DVACE
Glenn Thomas (1989-1990)
Paulette Mainwood (1990-1993)

Division of Public Schools
Charles Sherwood (1989-1990)
James Crosier (1990-1992)

Vocational and Adult Programs, Bureau of Program Support and Service
Paul Parker (1989-1990)
Erin McColsky (1990-1993)

Division of Human Resources, FDOE
Betty Fry (1989-1993)

Vo-Ed Teacher
Diane Culpepper, Boone High School (1989-1993)

Appendix C
National Center PBTE/CBSD Vocational Teacher Competencies

Excerpts for this Appendix are taken from:

Center on Education and Training for Employment. (1989). *Resource Person's Guide to Using Performance-Based Teacher Education Materials* (2nd Edition). Columbus OH: James B. Hamilton, pp. 53-65, 69-76.

Appendix B

MASTER LIST OF PERFORMANCE ELEMENTS FOR MODULE CATEGORIES A–J

A. Program Planning, Development, and Evaluation

1. Organize a steering committee to assist in the preplanning activities of a community survey.
2. Identify the geographical area in which a community survey will be conducted.
3. Obtain administrative approval for conducting a community survey.
4. Solicit assistance of the vocational education personnel from the state department and/or university in conducting a community survey.
5. Adapt existing community survey materials to local needs.
6. Consult the chamber of commerce to identify area employers to be contacted in a community survey.
7. Consult the local office of the U.S. Employment Service to obtain information on manpower trends and needs.
8. Persuade labor representatives to participate in a community survey.
9. Involve the steering committee in conducting a community survey.
10. Recruit teachers and guidance personnel to participate in conducting a community survey.
11. Establish communication with employer representatives who will be involved in a community survey.
12. Devise a plan of activities for the survey staff to follow in conducting a community survey.
13. Publicize the purposes and objectives of a community survey.
14. Orient the survey staff to their duties and responsibilities in collecting occupational data.
15. Direct students in the collection of data for a community survey.
16. Collect occupational data from employers to identify vocational education needs.
17. Collect student occupational interest data to identify vocational education needs.
18. Recommend a vocational education program based on the findings of a community survey.
19. Disseminate the findings of a community survey.
20. Identify the role and function of the advisory committee.
21. Establish the criteria for selection of the advisory committee members.
22. Obtain school board authorization for organizing the advisory committee.
23. Obtain administrative approval of the selected advisory committee members.
24. Publicize to the school and community the establishment of the advisory committee, its members, and its function.
25. Orient the advisory committee members to their role and function.
26. Plan the annual agenda to be considered by the advisory committee.
27. Communicate the date, place, and agenda for the advisory committee meetings to all persons concerned.
28. Invite resource persons who can provide consultation service to attend the advisory committee meetings.
29. Serve as the liaison for the advisory committee and the school administration.
30. Assist in the identification of the school's vocational education purposes and goals.
31. Determine the occupations for which training is to be offered in the vocational education program.
32. Consult the advisory committee in planning an analysis of an occupation.
33. Analyze occupations with the assistance of employers and labor representatives.
34. Identify the competencies needed for entry into an occupation.
35. Describe the occupational standards of performance for each task in an occupation.
36. Assist in writing general objectives for the vocational education program offerings.
37. Develop vocational education offerings by clustering and sequencing related tasks.
38. Identify the knowledge and attitudes required for the performance of each task included in a vocational education offering.
39. Write student performance objectives for the vocational education offering.
40. Consult the advisory committee in developing a long-range program plan for vocational education.
41. Analyze long-range needs for the offerings of the vocational education program.
42. Specify the long-range facility, equipment, and supply needs for the vocational education program.
43. Assist in the preparation of a long-range budget for the vocational education program.
44. Identify the long-range needs for employing faculty for the vocational education program.
45. Assist in preparing the long-range program plan for vocational education.
46. Analyze continual follow-up information on the placement, employment, and training status of each graduate of the vocational education program.
47. Obtain follow-up data from employers of graduates of the vocational education program.
48. Determine the reasons students leave the vocational education program.
49. Review supervisory evaluation reports for assessing the vocational education program.
50. Assess the relevancy of the vocational education offerings.
51. Disseminate a summary of the vocational education program evaluation to administrators, advisory committee members, and members of the board of education.

B. Instructional Planning

52. Review general objectives for the vocational education offerings.
53. Review student performance objectives developed for the vocational education offerings.
54. Sequence student performance objectives for an offering in the vocational education program.
55. Determine student needs and interests.

SOURCE: Calvin J. Cotrell *et al., Model Curricula for Vocational and Technical Teacher Education: Report No. V, General Objectives—Set II* (Columbus, OH: The Center for Vocational Education, The Ohio State University, 1972). See appendix A, p. 47, for additional information on the competency identification process.

56. Involve the students in planning a unit.
57. Select student performance objectives for a unit.
58. Write content outline for a unit.
59. Correlate unit content with on-the-job and/or laboratory experiences.
60. Determine group and individual learning experiences for a unit based on individual differences of students.
61. Select methods of evaluating student performance throughout a unit.
62. Identify the student performance objectives for a lesson.
63. Select teaching techniques for a lesson.
64. Plan the introduction of a lesson.
65. Plan the content of a lesson.
66. Plan the summary of a lesson.
67. Plan student learning experiences for a lesson.
68. Select methods of evaluating students' attainment of specific student performance objectives.
69. Write a lesson plan.
70. Obtain textbook, reference, and other instructional materials.
71. Select tools and/or equipment for a lesson.
72. Assemble consumable supplies for instructional purposes.
73. Develop original instructional materials such as individualized related assignment sheets, transparencies, and charts.
74. Involve students in the preparation of instructional materials.
75. Obtain programmed instructional materials.
76. Prepare instructional materials with a spirit duplicator.
77. Prepare instructional materials with a stencil duplicator.
78. Prepare instructional materials (hard copy and transparency) with a photocopier.

C. Instructional Execution

79. Conduct field trips.
80. Direct students in gathering information from sources in the community.
81. Conduct symposiums.
82. Conduct brainstorming sessions.
83. Direct student presentations.
84. Direct students in instructing other students.
85. Direct simulation techniques.
86. Conduct group supervised study.
87. Direct student laboratory experience.
88. Direct students in applying problem-solving techniques.
89. Present information through case study problems.
90. Present information by the project method.
91. Direct student study of textbooks, bulletins, and pamphlets.
92. Direct student study of information and assignment sheets.
93. Direct students in preparing laboratory work or job plans.
94. Guide student progress through the use of operation and/or job sheets.
95. Lead group discussions.
96. Conduct panel discussions.
97. Conduct buzz groups.
98. Employ the question box technique.
99. Employ role-playing techniques.
100. Introduce a lesson.
101. Obtain summary for a lesson.
102. Employ oral questioning techniques.
103. Acknowledge student verbal and nonverbal cues.
104. Enrich instruction to challenge the abilities of the more capable student.
105. Reinforce learning.
106. Provide remedial work for slow learners.
107. Employ reward techniques.
108. Establish frames of reference to enable the students to understand a situation from several points of view.
109. Apply nonverbal techniques.
110. Demonstrate a manipulative skill.
111. Present a concept or principle through a demonstration.
112. Give a lecture.
113. Give an illustrated talk.
114. Present information with analogies.
115. Present information by use of individualized instruction.
116. Present information through team teaching.
117. Give an assignment.
118. Present information with the assistance of a resource person.
119. Present information with bulletin boards.
120. Present information with exhibits.
121. Illustrate with models and real objects.
122. Present information with an overhead projector.
123. Present information with an opaque projector.
124. Present information with filmstrips.
125. Present information with slides.
126. Present information with sound motion pictures.
127. Present information with single concept films.
128. Present information with an audio recorder.
129. Present information with a video recorder or closed circuit television.
130. Present information with a tele-lecture.
131. Present information with a record player.
132. Present information with educational television.
133. Direct teaching-machine programmed instruction.
134. Present information by computer-assisted instruction.
135. Direct written programmed instruction.
136. Present information with the aid of a flannel board.
137. Present information with the aid of a flip chart.
138. Present information with the aid of a chalkboard.

D. Instructional Evaluation

139. Establish criteria for student performance.
140. Formulate a system of grading consistent with school policy.
141. Appraise students' products according to occupational performance standards.
142. Appraise students' performance in relation to student performance objectives.
143. Evaluate individualized assignments completed under directed study.
144. Devise self-evaluation techniques for use by students.
145. Arrange for students to evaluate their own progress.
146. Engage in cooperative evaluation of achievement with students.
147. Determine students' grades based on related instruction and laboratory or on-the-job experience.
148. Interpret students' evaluation of instruction.
149. Formulate essay test items.
150. Formulate true-false test items.
151. Formulate completion test items.
152. Formulate matching test items.
153. Formulate multiple-choice test items.
154. Devise laboratory performance tests.
155. Devise laboratory performance rating sheets.
156. Formulate test items for an oral test.
157. Administer teacher-made tests.
158. Devise case study problems.
159. Analyze tests for validity.
160. Analyze tests for reliability.
161. Review student progress and/or achievement records to assess effectiveness of instruction.

162. Involve students in formulating the procedures for their participation in the evaluation of instruction.
163. Obtain information from fellow teachers and supervisory personnel regarding the quality of one's instruction.
164. Seek opportunities for self-evaluation of instruction.

E. Instructional Management

165. Compile a list of supplies needed for the academic year.
166. Identify new tools and/or equipment needed for the academic year.
167. Recommend reference books and periodicals related to vocational education that should be added to the library.
168. Prepare a capital outlay budget proposal for new equipment.
169. Plan an operating budget proposal for consumable supplies, services, and instructional materials.
170. Prepare a budget for estimating travel expenses incurred in vocational activities.
171. Arrange for additional vocational facilities to accommodate expanded enrollments and technological advancements.
172. Prepare purchase requests for approved vocational equipment and supplies.
173. Design a procedure for acquiring needed consumable supplies and materials.
174. Accept gifts or donations of supplies and equipment for the vocational education program in accordance with school policy.
175. Devise a system for determining and collecting student fees for consumable supplies.
176. Structure a filing system for records and report forms.
177. Supply the data for vocational reports required by the state department of education.
178. Devise a filing system for instructional materials.
179. Devise a system for maintaining occupational opportunity information for use by vocational students.
180. Record vocational student attendance according to school policy.
181. Record vocational students' grades according to school policy.
182. Assemble individual student files documenting personal characteristics, attitudes, and grades.
183. Provide approved safety apparel and devices for vocational students assigned to hazardous equipment.
184. Establish a procedure for attending to the first aid needs of vocational students.
185. Maintain a record of safety instruction presented in compliance with safety laws and regulations.
186. Uphold school standards of expected student behavior.
187. Formulate with students acceptable standards of behavior in vocational classrooms and laboratories.
188. Uphold acceptable standards of student behavior in vocational classrooms and laboratories.
189. Carry out approved disciplinary action when warranted.
190. Encourage students to exercise self-discipline.
191. Control outbursts of fighting and aggressive behavior.
192. Maintain an inventory of vocational tools, supplies, and equipment.
193. Establish a system for repairing and servicing tools and equipment in the laboratory.
194. Arrange for the storage and security of supplies and equipment.
195. Implement student check-out procedures for tools, supplies, and equipment used in the laboratory.
196. Direct students in a system for cleaning and maintaining the laboratory.
197. Schedule laboratory equipment for maximum utilization by students.
198. Arrange layout of the vocational laboratory to simulate the occupational environment.
199. Arrange laboratory work areas and storage space to facilitate student work performance.
200. Control heat, light, and ventilation in vocational laboratories and classrooms.
201. Establish a policy for use of the physical facilities and equipment by other school personnel and outside groups.

F. Guidance

202. Determine students' background and environment.
203. Administer subject matter diagnostic tests.
204. Analyze students' cumulative records.
205. Maintain anecdotal records.
206. Determine relationships among students through the sociogram or other sociometric techniques.
207. Review students' autobiographies for information to aid in understanding the students.
208. Assemble information for case study reports.
209. Communicate with prospective and continuing students during the summer.
210. Maintain an open door policy for student consultation.
211. Encourage students to discuss career aspirations.
212. Demonstrate a regard for, and an interest in, students as individuals.
213. Develop constructive working relationships among students.
214. Demonstrate personal concern for the student and his family.
215. Conduct home visits.
216. Recognize potential problems of students.
217. Conduct a conference with a student.
218. Conduct group conferences.
219. Confer with the student and his/her parents regarding his/her educational development.
220. Interpret occupational tests and inventories to students.
221. Assist students in developing good study habits.
222. Establish communication patterns for exchanging information and for cooperating with the guidance staff.
223. Supply guidance staff with performance data about students.
224. Refer students to guidance staff and other specialists.
225. Assist students with their problems by working cooperatively with outside agencies such as health and welfare services.
226. Work with other teachers to help students with individual concerns.
227. Refer students to qualified resource persons for occupational and educational information.
228. Arrange with professional staff for administration and interpretation of personality, aptitude, and intelligence tests for specific students.
229. Arrange for the local office of the U.S. Employment Service to administer and interpret the General Aptitude Test Battery.
230. Present information to students on occupational opportunities.
231. Present information to students on advanced training and educational opportunities available to them.
232. Assist students in determining ways to best describe their salable skills.
233. Write letters of recommendation for students.
234. Assist graduating students in preparing for interviews with potential employers.
235. Assist students in securing and completing applications for jobs, scholarships, educational loans, or college admission.

G. School-Community Relations

236. Assist in the development of policies regarding school-community relations.
237. Plan the school-community relations activities for the vocational education program.
238. Procure clearance from the school administration to conduct school-community relations activities related to the vocational education program.
239. Express a philosophy consistent with that of the vocational faculty.
240. Speak to school and community groups about the vocational education program.
241. Provide brochures to inform the school and community about the vocational education program.
242. Provide displays in the school and community about the vocational education program.
243. Prepare news releases and manuscripts on activities of the vocational education program for newspapers and other periodicals.
244. Present activities of the vocational education program on television.
245. Present activities of the vocational education program on radio.
246. Direct student presentations describing activities of the vocational education program.
247. Conduct an open house to familiarize members of the school and community with activities of the vocational education program.
248. Sponsor student-parent activities for the vocational education program.
249. Assist with special community social events.
250. Assist with community business and industry sponsored activities.
251. Serve in professional nonvocational organizations to improve the image of the vocational education program.
252. Serve in a community civic, service, or social organization to improve the image of the vocational education program.
253. Provide consultant services to local business and industry.
254. Maintain liaison with union officials and employers.
255. Maintain liaison with employment agencies.
256. Maintain liaison with community professional, service, fraternal, social, and religious organizations.
257. Maintain good relations with other schools.
258. Maintain liaison with state department personnel.
259. Obtain informal feedback on the vocational education program through contacts with individuals in the school and community.
260. Conduct opinion surveys in the school and community concerning the vocational education program.
261. Analyze enrollment trends to determine student and parent acceptance of the vocational education program.
262. Obtain information from parents relative to their expectations of the vocational education program.
263. Consult the advisory committee to obtain information concerning their expectations of the vocational education program.
264. Acquire information from members of the community power structure (e.g., political, social, and economic pressure groups) regarding their expectations of the vocational education program.
265. Study community voting results on financial issues affecting the vocational education program to determine community support.
266. Study in-school election results (student council, class officers) to determine the image of the vocational students in the school.
267. Maintain working relationships with the school administration and faculty.
268. Assist in planning the goals of the total school program.
269. Maintain working relationships with the school supporting staff through cooperation and mutual effort.

H. Vocational Student Organization

270. Obtain approval from the school administration for establishing the vocational student organization.
271. Contact state department personnel regarding the steps to be followed in organizing a vocational student organization.
272. Acquaint prospective members and their parents with the purposes, activities, and values of the vocational student organization.
273. Organize a student committee to assess student interest in joining a vocational student organization.
274. Assist in the development of a constitution and bylaws for the vocational student organization.
275. Conduct an organizational meeting for a vocational student organization.
276. Direct initiation activities of the vocational student organization.
277. Orient students to the vocational student organization.
278. Assist in the election and installation of officers of the vocational student organization.
279. Conduct a leadership training session for the officers of the vocational student organization.
280. Obtain the assistance of state department personnel in maintenance of the vocational student organization.
281. Assist students in developing a yearly program of work for the vocational student organization.
282. Assist students in advancing within the available degrees in the vocational student organization.
283. Supervise social and educational activities for the vocational student organization.
284. Involve elected chapter parents in the activities of the vocational student organization.
285. Assist students with publicizing the vocational student organization activities.
286. Assist students with the financial management of the vocational student organization.
287. Assist in planning and organizing fund-raising activities for the vocational student organization.
288. Maintain a file of publications available for the vocational student organization.
289. Supervise the development of an annual handbook for the vocational student organization.
290. Supervise the development of a chapter scrapbook for the vocational student organization.
291. Evaluate the vocational student organization.
292. Affiliate the vocational student organization with the state and national vocational organizations.
293. Assist in the preparation of state and national reports for the vocational student organization.
294. Provide advice for student entries in state and national vocational student organization contests.
295. Send student representatives to district, state, regional, and national vocational student organization activities.
296. Assist in the development of rules and procedures for conducting district, state, regional, and national vocational student organization contests.
297. Serve as an advisor or judge for district, state, regional, or national vocational student organization contests.
298. Participate in district, state, regional, and national activities of the vocational student organization.

I. Professional Role and Development

299. Identify current trends of the teaching profession.
300. Promote the attainment of the goals of the teaching profession.
301. Express a personal professional philosophy consistent with the goals of the teaching profession.
302. Express a personal professional philosophy consistent with the goals of vocational education.

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303. Maintain the ethical standards expected of a professional educator.
304. Exchange observational visits, innovations, and ideas with others in the profession.
305. Support professional organizations through membership and attendance at meetings.
306. Serve professional organizations as an officer and/or chairperson, or member of a committee.
307. Represent the teaching profession as a committee member, delegate, or program participant at meetings and activities of other related professions.
308. Participate in experimental and other data-collecting research activities.
309. Write an article or book for publication which contributes to the literature of the profession.
310. Assist in orienting teachers who are new to the school system.
311. Work with a team from the school and/or community on pertinent school activities.
312. Serve community needs by contributing professional expertise to community activities.
313. Consult supervisory and administrative evaluations to determine attitudes of others toward one's personal and professional abilities and limitations.
314. Use a self-analysis form to evaluate personal and professional abilities and limitations.
315. Select the teaching position which is in keeping with personal and professional abilities and limitations.
316. Maintain professional certification through enrolling in graduate, extension, and inservice education programs.
317. Expand educational background and leadership potential by achieving advanced degrees.
318. Keep up to date through reading professional literature.
319. Acquire new occupational skills and information needed to keep pace with technological advancement in vocational education.
320. Update professional personnel file regularly.
321. Participate in noninstructional school activities (cafeteria supervision, homeroom, bus duty, chaperoning, etc.).
322. Assist with nonvocational student organization activities.
323. Provide opportunities for potential teachers to observe and participate in the public school program.
324. Interpret the policies and regulations of the local school district to the student teacher.
325. Plan activities for the student teacher which draw upon and enrich college course work.
326. Assign responsibilities commensurate with the student teacher's background of knowledge and experience.
327. Demonstrate instructional techniques for student teachers.
328. Consult regularly with the student teacher regarding planning, implementing, and evaluating teaching.
329. Confer regularly with the student teacher.
330. Confer with the college supervisor and the student teacher regarding plans for, and evaluation of, the total student teaching experience.

J. Coordination of Cooperative Education

331. Establish criteria for selection of student-learners.
332. Provide prospective student-learners with resource materials on occupational opportunities to aid them in selecting a vocation.
333. Administer occupational tests relative to student-learner selection and placement.
334. Gather student-learner selection data.
335. Interview students and parents to obtain student-learner interest and aptitude information.
336. Identify a prospective student-learner on the basis of selection criteria and data.
337. Match a student-learner's unique characteristics with an appropriate training station.
338. Negotiate on-the-job training hours and wages for student-learners.
339. Establish criteria for evaluating the training station potential of a business or industry.
340. Identify prospective cooperating employers to provide on-the-job training stations.
341. Establish criteria to evaluate qualifications of prospective on-the-job instructors.
342. Assess training capability of the on-the-job instructor of the prospective training station.
343. Assess educational adequacy of the prospective training station's facilities and equipment.
344. Assess safety provisions of the facilities and equipment of the prospective training station.
345. Convince an employer to provide a training station for cooperative vocational education.
346. Arrange with a union to make contract provisions for student-learners.
347. Develop a training agreement between student-learner, parent, school, and cooperating employer.
348. Arrange school and work schedules with student-learners and school and employing personnel.
349. Develop a systematic training plan with the cooperating employer and/or the on-the-job instructor.
350. Aid student-learners in procuring work permits.
351. Assist the cooperating employer in obtaining information concerning federal and state wage and hour classifications.
352. Assist the cooperating employer in acquiring a federal permit to pay a training wage.
353. Assist the cooperating employer in verifying the legality of employing a student-learner in a hazardous occupation.
354. Establish the cooperating employer's qualifications for reimbursement for training a student-learner.
355. Obtain reimbursement for the cooperating employer providing on-the-job training.
356. Obtain reimbursement for the student-learner for allowable training costs such as clothing and tools.
357. Prepare the student-learner for an interview with the cooperating employer and training station personnel.
358. Assist the student-learner in on-the-job training orientation.
359. Assist the cooperating employer's personnel in accepting the training status and role of the student-learner.
360. Maintain good working relationships with training station personnel.
361. Develop a procedure to ensure student's safety and protection in the training station.
362. Develop a plan for supervision of on-the-job training.
363. Inform the administration of the coordination itinerary.
364. Assess the on-the-job experience daily reports with the student-learner to plan future instruction.
365. Encourage the on-the-job instructor to follow the training plan in providing experiences for the student-learner.
366. Maintain the student-learner's progress reports for on-the-job training and related instruction.
367. Examine the student-learner's progress reports to determine future on-the-job training experiences and related instruction.
368. Maintain a record of individual work hours, wages, and work experiences of on-the-job training.
369. Assist the student-learner in the solution of problems related to on-the-job training.
370. Control student-learner absenteeism from school and on-the-job training.
371. Control the transfer of student-learners within the cooperative vocational education program and to other school programs.
372. Conduct termination procedures for on-the-job training for the student-learner when conditions demand it.

373. Sponsor an employer-employee appreciation event.
374. Evaluate the student-learner's work qualities and habits on the job.
375. Evaluate the student-learner's personal traits and characteristics on the job.
376. Check the student-learner's progress in acquiring skills on the job.
377. Check the student-learner's progress with the on-the-job instructor and other training station personnel.
378. Assess the student-learner's performance with the assistance of the on-the-job instructor.
379. Obtain suggestions from the on-the-job instructor to guide the selection of lessons for related instruction.
380. Evaluate the quality of the on-the-job training received by the student-learner.
381. Provide a workshop to assist on-the-job instructors in techniques for teaching student-learners.
382. Assist the on-the-job instructor with development of teaching techniques during supervisory visits to the training station.
383. Update related instruction for student-learners on the basis of information on technology obtained from cooperating employers.
384. Obtain information from the advisory committee on ways to improve related instruction and on-the-job training.

Appendix C

MASTER LIST OF PERFORMANCE ELEMENTS FOR MODULE CATEGORY K: Implementing CBE

1. Determine the roles, functions, and characteristics of a CBE teacher and assess your qualifications and willingness to perform in those roles.
2. Observe programs where CBE is being used.
3. Participate in someone else's CBE program as a student.
4. Enroll in courses and workshops covering CBE.
5. Keep up-to-date with what's going on in/with CBE (e.g., by reading the literature, attending conferences).
6. Increase your skills in developing rapport and communicating openly (e.g., with administrators).
7. Provide information to orient administrators to CBE and to the need for alternative grading procedures.
8. Orient advisory committee to CBE and your CBE program.
9. Orient employers to the individualized, competency-based approach.
10. Orient counselors and teachers in feeder schools to the CBE program.
11. Orient the community to competency-based instruction.
12. Promote your CBE program, explaining the advantages of this approach to prospective students.
13. Identify basic materials, equipment, and facilities needed, quantities needed, and their costs and sources.
14. Plan the physical arrangement of facilities and major equipment.
15. Organize a resource center, including provision for storage of software.
16. Provide an environment conducive to viewing media and listening to tapes without distractions.
17. Evaluate the physical placement of equipment and facilities.
18. Arrange for the purchase and/or duplication of multiple copies of materials.
19. Ensure that a relevant record-keeping system exists for CBE (developed statewide, institutionally, or by instructor).
20. Establish a "grading" procedure consistent with CBE and institutional requirements.
21. Determine time periods during which it is reasonable for students to enter the program.
22. Encourage the administration to provide a reasonable student-teacher ratio.
23. Organize field-based instructional settings.
24. Develop a task list.
25. Cluster tasks.
26. Sequence tasks.
27. Secure advisory committee verification of task lists.
28. Determine limits of program content.
29. Assist in determining student selection criteria for your CBE program.
30. Set standards to assess student readiness for exit or advanced placement.
31. Specify levels at which students can enter industry, as correlated with task clusters.
32. Return to industry to ensure that you, as a CBE instructor, can perform the specific skills that are taught in the program.
33. Assess the effectiveness of the way in which tasks are clustered and sequenced.
34. Determine whether instructional materials will be secured elsewhere, adapted, or developed locally.
35. Determine sources of CBE curriculum materials.
36. Modify materials secured from other sources.
37. Develop appropriate instructional materials.
38. Develop skills in writing clear, precise instructional materials that communicate to students.
39. Develop an awareness of how multimedia can be used in the classroom/lab (where each works best, when, etc.).
40. Gain skill in working with a wide variety of media.
41. Establish format for instructional materials.

SOURCE: The competencies on this list were identified, verified, and refined as part of a National Center/OSU project directed by James B. Hamilton; project staff included Lois G. Harrington, Michael E. Wonacott, and Cheryl M. Lowry; Glen E. Fardig of the University of Central Florida served as consultant. The DACUM competency identification panel included the following educators with expertise in implementing competency-based education: Odell Chism, Robert Dubanoski, Neil Reske, Bell Nicholson, Robert Rannells, Richard Sedlacek, William Shoaf, Kris Sitler, Michael Strohaber, and Ann Vescio. See appendix A, p. 50, for additional information on the competency identification process.

42. Establish, for each task, minimal acceptable industry standards to be met.
43. Establish general time lines for completion of individual competencies.
44. Develop assessment devices (skill tests, performance tests, written tests, pre- and post-tests).
45. Identify the learning activities required to learn the task.
46. Design student learning activities.
47. Select materials to support the learning activities specified.
48. Ensure that copyright laws are not violated within locally developed materials or by the reproduction of outside materials.
49. Conduct ongoing evaluation of instructional materials to ensure that they do what they are supposed to do.
50. Assess the readability level of materials for particular students.
51. Assess materials periodically to ensure that the content is up-to-date (e.g., in terms of the tasks covered and references to the resources required).
52. Develop the skills necessary to manage and coordinate multiple, diverse learning activities.
53. Maintain a safe, ordered, yet flexible learning environment (job atmosphere).
54. Function as a learning manager, being willing to let students work on their own, with your trust.
55. Gain skill in using a wide variety of teaching techniques well.
56. Provide for the development of competency-based programs unique to individual student needs.
57. Schedule individual/group learning experiences.
58. Involve students in providing assistance to other students.
59. Coordinate student activities occurring in different areas (learning activities, lab maintenance).
60. Manage the storage and use of CBE materials, equipment, records, and overall inventory of supplies, tools, and other materials.
61. Develop a system for students to check materials in and out as required.
62. Establish student performance data-collection procedures.
63. Provide for continual performance feedback to students.
64. Conduct student performance assessment of occupational competencies.
65. Maintain appropriate individual records of student progress (e.g., start, stop, achievement of competencies).
66. Evaluate your management procedures (e.g., record-keeping, "grading").
67. Orient students to the CBE concepts.
68. Orient students to the assessment system.
69. Orient students to the learning materials.
70. Orient students to their roles and responsibilities in CBE.
71. Orient students to specific skills available through your course.
72. Orient students to the CBE facilities (e.g., resource center, records storage).
73. Assess students to determine needs, abilities, and goals.
74. Assist students in determining whether this specific CBE program is appropriate to their needs, abilities, goals.
75. Work with students to devise individual learning plans (e.g., use of contracts).
76. Develop the counseling skills needed to deal with working with students on a one-on-one, individualized basis.
77. Know when to counsel and when (and where) to refer.
78. Counsel/advise students in self-assessment of their progress through the CBE program.
79. Employ constructive criticism.
80. Sustain motivation by a generous use of praise for a job well done.
81. Encourage open communication such that students feel free to ask for help.
82. Assist students in developing self-motivation.
83. Allow students to experiment, knowing that "failure" at that point can be a learning experience and that they can continue to practice until they succeed.
84. Evaluate student progress.

Appendix D

MASTER LIST OF PERFORMANCE ELEMENTS FOR MODULE CATEGORY L: Serving Students with Special/Exceptional Needs

1. Define your role in serving exceptional students.
2. Review your attitude toward exceptional students.
3. Improve your knowledge, skills, and experience regarding exceptional students.
4. Identify students who appear to have exceptional needs and abilities.
5. Identify the exceptional needs and abilities of students.
6. Diagnose the specific needs/abilities of students.
7. Interpret results of diagnosis of students' needs/abilities.
8. Gather and interpret basic information about exceptional students.
9. Identify modifications required in program goals and objectives and occupational tasks in light of students' exceptional needs.
10. Prepare a tentative individual training plan.
11. Conduct a planning meeting to finalize the individual training plan.
12. Evaluate instructional materials for bias.
13. Evaluate instructional materials against the capabilities of your exceptional students.
14. Adapt, develop, or select instructional materials for your exceptional students.
15. Consult with students about their exceptional needs and modifications needed in the learning environment.
16. Analyze the learning environment for modifications needed to serve your exceptional students.
17. Make needed modification to the learning environment for exceptional students.
18. Inform students about their peers with special needs.
19. Demonstrate acceptance of students with special needs.
20. Provide activities to allow students to interact, cooperate, and relate to one another.
21. Encourage student support groups.
22. Base the selection of teaching techniques on the general principles of good teaching.
23. Individualize instruction for exceptional students.
24. Reinforce instruction for exceptional students.
25. Use specific activities to remediate, accelerate, and accommodate a variety of student needs.
26. Communicate actively with students.
27. Communicate honestly with students.
28. Communicate fairly with students.
29. Communicate understandably with students.
30. Use assessment techniques appropriate to the exceptional needs of students.
31. Minimize the fear of testing.
32. Record results of assessment of exceptional needs students' progress.
33. Provide frequent and continual feedback to exceptional needs students.
34. Use an appropriate grading system for exceptional needs students.
35. Identify exceptional needs students who need assistance with personal/social problems.
36. Develop rapport with exceptional needs students.
37. Counsel students with specific personal/social problems.
38. Refer students to other professionals if necessary.
39. Assist exceptional needs students in developing decision-making skills.
40. Assist exceptional needs students in increasing self-awareness.
41. Assist exceptional needs students in gaining career awareness.
42. Assist exceptional needs students in setting and accepting realistic career goals and plans.
43. Assure advisory representation with cognizance of the needs of exceptional needs students.
44. Gather specific employment opportunity information for students with exceptional needs.
45. Identify the employability needs of exceptional needs students.
46. Plan techniques to meet the employability needs of exceptional needs students.

SOURCE: The competencies on this list were identified, verified, and refined as part of a National Center/OSU project directed by James B. Hamilton; project staff included Lois G. Harrington, Michael E. Wonacott, Karen M. Quinn, Cheryl M. Lowry, and others. Approximately 80 vocational-technical teachers and supervisors from throughout the United States served on the eight DACUM competency identification panels, one for each of the special/exceptional needs groups included in the study. See appendix A, p. 50, for additional information on the competency identification process.

47. Help students with exceptional needs obtain employment.
48. Identify prospective students with exceptional needs.
49. Select and use appropriate recruitment strategies with students with exceptional needs.
50. Use promotion to gain school and community support and to establish the credibility of your program in preparing students with special needs for employment.

Appendix E

MASTER LIST OF PERFORMANCE ELEMENTS FOR MODULE CATEGORY M: Assisting Students in Improving Their Basic Skills

1. Accept your responsibility for the provision of reading instruction.
2. Identify the reading skills required for entry into the trade/vocation.
3. Assess students' reading abilities.
4. Diagnose students' reading problems and reading levels.
5. Use care in interpreting existing student records.
6. Identify available instructional materials written at the appropriate reading level.
7. Use appropriate support personnel and materials.
8. Demonstrate a positive attitude toward reading.
9. Create a classroom environment conducive to reading.
10. Provide incentives to encourage student improvement.
11. Use students' special vocational interests to motivate them to read.
12. Teach appropriate technical and related vocabulary.
13. Demonstrate practical reading tips (e.g., skimming, pointing, underlining).
14. Develop students' ability to follow written instructions (e.g., have students read instructions and perform a specific series of hands-on activities).
15. Individualize reading instruction (e.g., through the use of modules).
16. Use small groups/pairings in reading activities.
17. Use reading games (e.g., crossword puzzles, word scrambles, word searches).
18. Use audiovisual techniques (e.g., audiotape reading assignments).
19. Assist students in using self-evaluation techniques to determine their reading comprehension.
20. Provide opportunities for the practice and reinforcement of reading.
21. Accept your responsibility for the provision of writing instruction.
22. Identify the writing skills required for entry into the trade/vocation.
23. Assess students' writing abilities.
24. Diagnose students' writing problems (e.g., in spelling, clarity, punctuation, grammar).
25. Provide standards for written materials (e.g., for spelling, clarity, punctuation, grammar).
26. Provide model formats for written materials (e.g., memos, reports, business letters, work orders).
27. Provide vocationally related writing assignments.
28. Assign writing topics related to students' special vocational interests.
29. Encourage student use of appropriate technical and related vocabulary.
30. Individualize writing instruction.
31. Use writing games (e.g., paragraph scrambles).
32. Provide opportunities for students to critique writing samples.
33. Assist students in using self-evaluation techniques to determine their writing ability.
34. Correct students' writing errors (e.g., in spelling, clarity, punctuation, grammar).
35. Accept your responsibility for the provision of oral communication instruction.
36. Identify the oral communication skills required for entry into the trade/vocation.
37. Assess students' oral communication skills (speaking and listening).
38. Diagnose students' oral communication problems (e.g., in grammar, pronunciation, clarity).
39. Teach appropriate technical and related vocabulary.
40. Encourage student use of appropriate technical and related vocabulary.
41. Correct students' errors in speech (e.g., by focusing on one or two errors at a time).
42. Develop students' awareness of body language (nonverbal communication).
43. Use oral questioning techniques.
44. Ask students to repeat written and oral instructions to ensure their understanding.

SOURCE: The competencies on this list were identified, verified, and refined as part of a National Center/OSU project directed by James B. Hamilton; project staff included Lois G. Harrington, Michael E. Wonacott, Catherine C. Fitch, Elizabeth Kendall, and others. The DACUM competency identification panel included the following educators with expertise in assisting students in improving their basic skills: Milton Arnold, Lewis Cain, William Chandler, Jim Frazier, Jackie Marshall, Teresa Paige, Thomas Peterson, Marie Schemitz, and Nancy Underwood. See appendix A, p. 50, for additional information on the competency identification process.

45. Use role-playing techniques to improve oral communication.
46. Use oral communication games (e.g., rumor, one-way communication).
47. Have students give small- and large-group oral presentations.
48. Provide opportunities for students to practice their listening skills.
49. Teach techniques for using the telephone effectively.
50. Provide simulated and real-life opportunities for telephone use.
51. Assist students in using media to evaluate their own performance and progress.
52. Use guest speakers to stimulate student discussion.
53. Encourage students to take advantage of the opportunities for communication available through participation in vocational student organizations.
54. Accept your responsibility for the provision of math instruction.
55. Identify the math skills required for entry into the trade/vocation.
56. Identify the math skills required to succeed in the vocational program.
57. Assess students' math skills.
58. Diagnose students' math deficiencies (e.g., inability to add and subtract).
59. Assess the appropriateness of math-related explanations in your instructional materials.
60. Identify available math-related materials appropriate to students' abilities and your vocational area.
61. Use appropriate support personnel and materials.
62. Teach appropriate technical and related math vocabulary.
63. Individualize math instruction.
64. Use students' special vocational interests to motivate them to develop their math skills.
65. Provide practical math application activities (e.g., computing income tax, balancing checkbook, computing supply orders).
66. Provide simulated and real-life opportunities for math usage (e.g., through business situations).
67. Use audiovisual aids to teach and reinforce math concepts.
68. Use tutors (e.g., students, retirees, volunteers) to aid students in improving math skills.
69. Assist students in using self-evaluation techniques.
70. Accept your responsibility for the provision of survival skills instruction.
71. Assist students in clarifying their values.
72. Assist students in setting realistic short-term and long-term goals.
73. Assist students in developing personal decision-making skills.
74. Assist students in dealing with a multiplicity of adult roles and responsibilities.
75. Promote good safety habits.
76. Assist students in developing appropriate personal hygiene and nutrition habits.
77. Assist students in developing time management skills.
78. Provide opportunities for students to improve their interpersonal relationship skills (e.g., through the vocational student organization).
79. Assist students in developing personal financial skills.
80. Help students to become more knowledgeable consumers.
81. Teach students to use reference books (e.g., telephone book, dictionary, maps, thesaurus).
82. Help students identify, understand, and use sources of career information.
83. Prepare students to find, obtain, retain, and properly exit employment.
84. Assist students in developing an awareness of their legal rights and responsibilities on the job (e.g., knowledge of minimum wage laws).
85. Assist students in developing an awareness of their rights, responsibilities, and benefits as employees (e.g., knowledge of company policy, insurance benefits, and promotion policy).

Appendix F

MASTER LIST OF PERFORMANCE ELEMENTS FOR MODULE CATEGORY N: Teaching Adults

1. Demonstrate knowledge of differences between andragogy and pedagogy.
2. Demonstrate knowledge of factors that motivate adult learners.
3. Demonstrate knowledge of life responsibilities of the adult learner.
4. Analyze own personal development process.
5. Analyze own learning experiences.
6. Analyze own learning styles.
7. Prepare a personal professional development plan.
8. Assess training needs.
9. Develop customized training.
10. Provide for distance learning options.
11. Describe your program.
12. Recruit learners.
13. Monitor learner satisfaction.
14. Assess program outcomes.
15. Report program results (outcomes).
16. Establish external linkages.
17. Establish internal linkages.
18. Identify support services for overcoming barriers.
19. Assess learners' prerequisite skills.
20. Assess learners' prior experiences.
21. Clarify learners' goals.
22. Analyze learners' learning styles.
23. Verify correct placement of learner in training program.
24. Maintain training record and related data.
25. Determine (job-related) learning objectives based on needs assessment.
26. Maintain proper balance between meeting learner needs and content requirements.
27. Employ a variety of instructional techniques.
28. Match instructional techniques to learning styles.
29. Employ instructional strategies to increase learners' confidence.
30. Employ instructional strategies to increase group cohesion.
31. Employ coaching techniques to reinforce learning.
32. Select, develop, or modify materials to meet learners' needs.
33. Employ new educational technology (e.g., interactive video, videotape, computer-assisted instruction).
34. Provide for physiological needs of individual learners.
35. Manage physical environment.
36. Demonstrate sensitivity to sociocultural differences.
37. Demonstrate skill in working with an LEP population.
38. Establish adult-to-adult rapport.
39. Use language relevant and appropriate to the adult learner.
40. Demonstrate acceptance of adult as a learning resource.
41. Relate classroom activities to experiences of learners.
42. Respond to the need of the adult to be independent.
43. Create a participatory environment.
44. Serve as a role model in learning.
45. Adjust pace of instruction to individual learners.
46. Advise learners on career placement.
47. Provide support services.
48. Identify available referral services.
49. Employ collaborative assessment techniques.
50. Conduct follow-up assessment to see if need has been met.

SOURCE: The competencies on this list were identified, verified, and refined as part of a National Center/OSU project directed by Robert E. Norton; project staff included Lois G. Harrington, Catherine C. Fitch, Kathleen Kopp, and David J. Kalamas. The DACUM competency identification panel included the following educators with expertise in teaching adults: Doe Hentschel, David Holmes, Joanne Jorz, Jean Lowe, Jim Menapace, Norma Milanovich, Cuba Miller, Donald Mocker, and Michael A. Spewok. See appendix A, p. 50, for additional information on the competency identification process.

Appendix G

MASTER LIST OF PERFORMANCE ELEMENTS FOR MODULE E-10: Combat Problems of Student Chemical Use

1. Prepare yourself to deal with student use of alcohol and other drugs.
2. Use prevention techniques in dealing with student use of alcohol and other drugs.
3. Use intervention techniques in dealing with student use of alcohol and other drugs.
4. Use support and follow-up techniques in dealing with student use of alcohol and other drugs.

SOURCE: The competencies on this list were identified, verified, and refined as part of a National Center/OSU project directed by James B. Hamilton; project staff included Michael E. Wonacott, Lois G. Harrington, and others. The DACUM competency identification panel included the following educators with expertise in combating problems of student chemical use: Earl Emery, Mari Kaptain, Thomas Lively, Olive Miller, Thomas Murray, William Segeleon, and Mike Stecyk. See appendix A, p. 50, for additional information on the competency identification process.

Appendix H

MODULE TITLES AND ASSOCIATED PERFORMANCE ELEMENTS

Category A
PROGRAM PLANNING, DEVELOPMENT, AND EVALUATION

Module	Title	Performance Elements
A-1	Prepare for a Community Survey	1–12, 14, 15
A-2	Conduct a Community Survey	13, 16, 17
A-3	Report the Findings of a Community Survey	18, 19
A-4	Organize an Occupational Advisory Committee	20, 24
A-5	Maintain an Occupational Advisory Committee	25, 29
A-6	Develop Program Goals and Objectives	30, 31, 36, 52
A-7	Conduct an Occupational Analysis	32–35
A-8	Develop a Course of Study	34–38
A-9	Develop Long-Range Program Plans	40–45
A-10	Conduct a Student Follow-Up Study	46–48
A-11	Evaluate Your Vocational Program	49–51

Category B
INSTRUCTIONAL PLANNING

Module	Title	Performance Elements
B-1	Determine Needs and Interests of Students	55
B-2	Develop Student Performance Objectives	39, 53, 54
B-3	Develop a Unit of Instruction	56–61
B-4	Develop a Lesson Plan	62–69
B-5	Select Student Instructional Materials	70–72, 75
B-6	Prepare Teacher-Made Instructional Materials	73, 74, 76–78

NOTE: The performance elements for the modules in Categories A–J (with the exception of Module E-10) are listed in appendix B.

Category C
INSTRUCTIONAL EXECUTION

Module	Title	Performance Elements
C-1	Direct Field Trips	79, 80
C-2	Conduct Group Discussions, Panel Discussions, and Symposiums	81, 95, 96
C-3	Employ Brainstorming, Buzz Group, and Question Box Techniques	82, 97, 98
C-4	Direct Students in Instructing Other Students	83, 84
C-5	Employ Simulation Techniques	85, 99
C-6	Guide Student Study	86, 91, 92, 117, 221
C-7	Direct Student Laboratory Experience	87, 93, 94
C-8	Direct Students in Applying Problem-Solving Techniques	88, 89
C-9	Employ the Project Method	90
C-10	Introduce a Lesson	100
C-11	Summarize a Lesson	101
C-12	Employ Oral Questioning Techniques	102
C-13	Employ Reinforcement Techniques	103, 105, 107, 109
C-14	Provide Instruction for Slower and More Capable Learners	104, 106
C-15	Present an Illustrated Talk	108, 112–114
C-16	Demonstrate a Manipulative Skill	110
C-17	Demonstrate a Concept or Principle	111
C-18	Individualize Instruction	115, 143
C-19	Employ the Team Teaching Approach	116
C-20	Use Subject Matter Experts to Present Information	118, 130
C-21	Prepare Bulletin Boards and Exhibits	119, 120
C-22	Present Information with Models, Real Objects, and Flannel Boards	121, 136
C-23	Present Information with Overhead and Opaque Materials	122, 123
C-24	Present Information with Filmstrips and Slides	124, 125
C-25	Present Information with Films	126, 127
C-26	Present Information with Audio Recordings	128, 131
C-27	Present Information with Televised and Videotaped Materials	129, 132
C-28	Employ Programmed Instruction	133, 135
C-29	Present Information with the Chalkboard and Flip Chart	137, 138

NOTE: The performance elements for the modules in Categories A–J (with the exception of Module E-10) are listed in appendix B.

Category D
INSTRUCTIONAL EVALUATION

Module	Title	Performance Elements
D-1	Establish Student Performance Criteria	139
D-2	Assess Student Performance: Knowledge	142, 149–153, 156–160
D-3	Assess Student Performance: Attitudes	142, 149, 156, 158–160
D-4	Assess Student Performance: Skills	141, 142, 144–146, 154, 155, 157, 159, 160
D-5	Determine Student Grades	140, 147
D-6	Evaluate Your Instructional Effectiveness	148, 161–164

Category E
INSTRUCTIONAL MANAGEMENT

Module	Title	Performance Elements
E-1	Project Instructional Resource Needs	165–167
E-2	Manage Your Budgeting and Reporting Responsibilities	168–170, 172–175, 177
E-3	Arrange for Improvement of your Vocational Facilities	171
E-4	Maintain a Filing System	176, 178–182
E-5	Provide for Student Safety	183, 185
E-6	Provide for the First Aid Needs of Students	184
E-7	Assist Students in Developing Self-Discipline	186–191
E-8	Organize the Vocational Laboratory	194, 198, 199
E-9	Manage the Vocational Laboratory	192, 193, 195–197, 200, 201
E-10	Combat Problems of Student Chemical Use	1–4

NOTE: The performance elements for the modules in Categories A–J (with the exception of Module E-10) are listed in appendix B. The performance elements for Module E-10 are listed in appendix G.

Category F
GUIDANCE

Module	Title	Performance Elements
F-1	Gather Student Data Using Formal Data-Collection Techniques	202–208, 212, 222, 223, 228, 229
F-2	Gather Student Data Through Personal Contacts	209, 212, 214–216, 222, 226
F-3	Use Conferences to Help Meet Student Needs	210–212, 217–220, 222, 224, 225, 227
F-4	Provide Information on Educational and Career Opportunities	212, 213, 222, 230, 231
F-5	Assist Students in Applying for Employment or Further Education	212, 232–235

Category G
SCHOOL-COMMUNITY RELATIONS

Module	Title	Performance Elements
G-1	Develop a School-Community Relations Plan for Your Vocational Program	236–239, 248
G-2	Give Presentations to Promote Your Vocational Program	240, 246
G-3	Develop Brochures to Promote Your Vocational Program	241
G-4	Prepare Displays to Promote Your Vocational Program	242
G-5	Prepare News Releases and Articles Concerning Your Vocational Program	243
G-6	Arrange for Television and Radio Presentations Concerning Your Vocational Program	244, 245
G-7	Conduct an Open House	247
G-8	Work with Members of the Community	249–256
G-9	Work with State and Local Educators	257, 258, 267–269
G-10	Obtain Feedback about Your Vocational Program	259–266

NOTE: The performance elements for the modules in Categories A–J (with the exception of Module E-10) are listed in appendix B.

Category H
VOCATIONAL STUDENT ORGANIZATION

Module	Title	Performance Elements
H-1	Develop a Personal Philosophy Concerning Vocational Student Organizations	270
H-2	Establish a Vocational Student Organization	270–275, 277, 280, 292
H-3	Prepare Vocational Student Organization Members for Leadership Roles	276, 278, 279, 282, 295
H-4	Assist Vocational Student Organization Members in Developing and Financing a Yearly Program of Activities	281, 286, 287, 289
H-5	Supervise Activities of the Vocational Student Organization	283–285, 288, 290, 291, 293, 298
H-6	Guide Participation in Vocational Student Organization Contests	294–297

Category I
PROFESSIONAL ROLE AND DEVELOPMENT

Module	Title	Professional Elements
I-1	Keep Up-to-date Professionally	299, 304, 318, 319
I-2	Serve Your Teaching Profession	300, 305–309
I-3	Develop an Active Personal Philosophy of Education	301–303
I-4	Serve the School and Community	310–312, 321, 322
I-5	Obtain a Suitable Teaching Position	313–317, 320
I-6	Provide Laboratory Experiences for Prospective Teachers	323, 325
I-7	Plan the Student Teaching Experience	324–326, 330
I-8	Supervise Student Teachers	327–329

NOTE: The performance elements for the modules in Categories A–J (with the exception of Module E-10) are listed in appendix B.

Category J
COORDINATION OF COOPERATIVE EDUCATION

Module	Title	Performance Elements
J-1	Establish Guidelines for Your Cooperative Vocational Program	331, 339, 341, 354–356
J-2	Manage the Attendance, Transfers, and Terminations of Co-op Students	370–372
J-3	Enroll Students in Your Co-op Program	332–336
J-4	Secure Training Stations for Your Co-op Program	337, 340, 342–345
J-5	Place Co-op Students on the Job	337, 338, 346–353, 357
J-6	Develop the Training Ability of On-the-Job Instructors	359, 360, 365, 380–382
J-7	Coordinate On-the-Job Instruction	358, 361–364, 366–369
J-8	Evaluate Co-op Students' On-the-Job Performance	374–378
J-9	Prepare for Students' Related Instruction	379, 383, 384
J-10	Supervise an Employer-Employee Appreciation Event	373

Category K
IMPLEMENTING COMPETENCY-BASED EDUCATION (CBE)

Module	Title	Performance Elements
K-1	Prepare Yourself for CBE	1–12
K-2	Organize the Content for a CBE Program	24–33
K-3	Organize Your Class and Lab to Install CBE	13–23
K-4	Provide Instructional Materials for CBE	34–51
K-5	Manage the Daily Routines of Your CBE Program	52–66
K-6	Guide Your Students Through the CBE Program	67–84

NOTE. The performance elements for the modules in Categories A–J (with the exception of Module E-10) are listed in appendix B.

The performance elements for Category K are listed in appendix C.

Category L
SERVING STUDENTS WITH SPECIAL/EXCEPTIONAL NEEDS

Module	Title	Performance Elements
L-1	Prepare Yourself to Serve Exceptional Students	1–3
L-2	Identify and Diagnose Exceptional Students	4–7
L-3	Plan Instruction for Exceptional Students	8–10
L-4	Provide Appropriate Instructional Materials for Exceptional Students	11–13
L-5	Modify the Learning Environment for Exceptional Students	14–16
L-6	Promote Peer Acceptance of Exceptional Students	17–20
L-7	Use Instructional Techniques to Meet the Needs of Exceptional Students	21–25
L-8	Improve Your Communication Skills	26–29
L-9	Assess the Progress of Exceptional Students	30–34
L-10	Counsel Exceptional Students with Personal-Social Problems	35–38
L-11	Assist Exceptional Students in Developing Career Planning Skills	39–42
L-12	Prepare Exceptional Students for Employability	43–47
L-13	Promote Your Vocational Program with Exceptional Students	48–50

Category M
ASSISTING STUDENTS IN IMPROVING THEIR BASIC SKILLS

Module	Title	Performance Elements
M-1	Assist Students in Achieving Basic Reading Skills	1, 3–5, 8–10, 13, 15–20
M-2	Assist Students in Developing Technical Reading Skills	2, 6, 7, 11, 12, 14
M-3	Assist Students in Improving Their Writing Skills	21–34
M-4	Assist Students in Improving Their Oral Communication Skills	35–53
M-5	Assist Students in Improving Their Math Skills	54–69
M-6	Assist Students in Improving Their Survival Skills	70–85

NOTE: The performance elements for the Category L are listed in appendix D.

The performance elements for Category M are listed in appendix E.

Category N
TEACHING ADULTS

Module	Title	Performance Elements
N-1	Prepare to Work with Adult Learners	1–7
N-2	Market an Adult Education Program	8–18
N-3	Determine Individual Training Needs	19–24
N-4	Plan Instruction for Adults	25–26
N-5	Manage the Adult Instructional Process	27–48
N-6	Evaluate the Performance of Adults	49–50

NOTE: The performance elements for Category N are listed in appendix F.

Appendix D
VENAP Teacher Competencies

Excerpts for this Appendix are taken from:

Kaufman, R., Knight, M.R., Andrews, M. T., Bogusch, B., Braziel, D., Johnson, M., & Ward, M. J. (1978). *Needs assessment for vocational educators in Florida.* Tallahassee, FL: Center for Needs Assessment and Planning, pp. 134-143.

Vocational Teacher Competency Statements

The following statements represent a tentative listing of competencies for vocational teachers. This list of statements is to accompany Figures 5.1 and 5.4, and Tables 5.1 and 5.2, presented in the text of Chapter 5. The numbered statements are congruent with the numbers in the cells of Tables 5.1 and 5.2. The parenthetical numbers at the end of each statement refer to the source from which the statement was extracted. A list of the sources is provided at the end of this attachment.

Competency Statement En-route	"systems" Model	System Model
1. Determining and stating the goals and purposes for any instruction. (1)	Planning/ Design	4.0
2. Identifying all the skills and knowledges that would be required for students to achieve desired objectives. (1)	Planning/ Design	4.0
3. Identifying the types of learning (information, problem solving, motor skills, attitudes, etc.) required to reach each stated objective. (1)	Planning/ Design	4.0
4. Select curricula which assists learners to acquire employment skills. (2)	Planning/ Design	4.0
5. Write performance objectives with measurable outcomes. (2)	Planning/ Design	2.0
6. Select performance objectives with measurable outcomes.	Planning/ Design	2.0
7. You will be able to identify and describe procedural, hierarchical, and combination approaches in instructional analysis. (4)	Planning/ Design	4.0
8. You will be able to describe the relationship among the subskills which are identified through an instructional analysis. (4)	Planning/ Design	4.0

En-route	"systems" Model	System Model
9. You will be able to describe entry behaviors and distinguish them from general characteristics of students in a target population. (4)	Planning/ Design	2.0
10. You will be able to derive entry behaviors when given an instructional analysis and a specific target population. (4)	Planning/ Design	4.0
11. You will be able to identify and describe the components of a properly written performance objective. (4)	Planning/ Design	4.0
12. You will be able to identify and describe the major components of an instructional strategy. (4)	Planning/ Design	4.0
13. The student should be able to effectively utilize behavioral objectives as an integral part of his instructional units. (4)	Planning/ Design	4.0
14. The participant must be able to define terms associated with teacher planning. (8)	Planning/ Design	4.0
15. The participant must be able to describe the desirable characteristics and content of a good lesson plan. (8)	Planning/ Design	4.0
16. The teacher should be able to identify factors which affect learning and describe how to alter his teaching to obtain maximum learning. (8)	Planning/ Design	3.0
17. Determine students needs and interests. (9)	Planning/ Design	2.0
18. Selecting media to most effectively communicate desired content keeping in mind either the type learning or the purpose of the instruction. (1)	Development	3.0
19. Given an instructional strategy, you will be able to describe the procedures for developing instructional materials. (3)	Development	4.0
20. Identify the characteristics of a criterion-referenced test. (3)	Assessment/ Evaluation	4.0

En-route	"systems" Model	System Model
21. Describe the characteristics of an entry behavior test, a pretest, and a post-test. (4)	Assessment/ Evaluation	4.0
22. Help adult learners in developing positive self-concepts by designing success opportunities for each learner. (2)	Planning/ Design	4.0
23. You will be able to apply instructional analysis techniques to identify subskills required to reach a given instructional plan. (2)	Planning/ Design	4.0
24. Help students to adapt to change. (2)	Implementation/ Management	4.0
25. Reinforce positive attitudes toward learning. (2)	Implementation/ Management	4.0
26. Apply knowledge of group dynamics to assist students in interacting constructively with peers. (2)	Implementation/ Management	4.0
27. Establish a basis of mutual respect with learners. (2)	Implementation/ Management	4.0
28. Select and obtain instructional materials. (5)	Development	4.0
29. Illustrate with exhibits. (5)	Development	4.0
30. Present information with instructional television. (5)	Development	4.0
31. Illustrate with models or real objectives. (5)	Development	4.0
32. Present information with filmstrips and/ or records. (5)	Development	4.0
33. Demonstrate a concept or principle. (5)	Development	4.0
34. Present information with a chalkboard. (5)	Development	4.0
35. Present information with overhead projector. (5)	Development	4.0
36. Reviewing, selecting, and adapting materials. (6)	Development	4.0

En-route	"systems" Model	System Model
37. Present information with a computer. (6)	Development	4.0
38. Develop effective working relationships with learners. (6)	Implementation/ Management	4.0
39. Given a variety of objectives, write appropriate criterion-referenced test items which will reflect the behavior required of students in the objective. (4)	Assessment/ Evaluation	5.0
40. Devise self-evaluation techniques for use by students. (9)	Assessment/ Evaluation	5.0
41. Devise laboratory performance tests and performance rating sheets. (9)	Assessment/ Evaluation	5.0
42. Gathers information on individual differences among students such as interest, values, cultural and socio-economic backgrounds. (10)	Assessment/ Evaluation	5.0
43. Select curricula which meets individual personal interests of learners. (2)	Planning/ Design	4.0
44. Relate learning to immediate application. (2)	Implementation/ Management	4.0
45. Assist learners who desire to assume new roles in society. (2)	Implementation/ Management	4.0
46. Use sociometric techniques to enhance classroom learning. (2)	Implementation/ Management	4.0
47. Provide opportunity for learners to participate in curricular evaluation. (2)	Assessment/ Evaluation	6.0
48. Apply instructional techniques which utilize talents, abilities, and experiences of group members. (2)	Implementation/ Management	4.0
49. Employ the technique of simulation. (5)	Development	4.0
50. Conduct conferences with students or others. (5)	Implementation/ Management	4.0
51. Direct student presentations. (5)	Implementation/ Management	4.0
52. Manage and maintain instruments and supplies in the laboratory. (5)	Implementation/ Management	4.0

En-route	"systems" Model	System Model
53. Provide for the first aid needs of students. (5)	Implementation/ Management	4.0
54. Establish frames of reference to enable students to understand a situation from several points of view. (9)	Implementation/ Management	4.0
55. Provide for the appropriate use of a variety of communication patterns within the classroom. (10)	Implementation/ Management	4.0
56. Diagnose entry knowledge and skills of learners for a given set of instructional objectives. (2)	Assessment/ Evaluation	4.0
57. Determining duties and establishing time schedules for persons directly under your supervision such as aides tutors, student teachers. (1)	Implementation/ Management	4.0
58. Organizing and establishing procedures for special occasions such as field trips, special speakers, etc.	Implementation/ Management	4.0
59. Establishing classroom management procedures. (1)	Implementation/ Management	4.0
60. Establishing and maintaining classroom records and procedures to facilitate efficient classroom management. (1)	Implementation/ Management	4.0
61. Developing student schedules for the classroom that will enable adequate time for both individualized and group instruction. (1)	Implementation/ Managment	4.0
62. Scheduling and organizing learning activities to achieve a balance among student needs, material constraints, and school scheduling constraints. (1)	Implementation/ Management	4.0
63. Selecting methods of evaluating student performance throughout a unit. (9)	Planning/ Design	3.0
64. You will be able to describe the purposes for documenting the design and development process required to produce individualized instruction. (3)	Development	4.0

En-route	"systems" Model	System Model
65. Identify available resource personnel and services for the design of curricula. (2)	Implementation/ Management	3.0
66. Relating to supervisors, principals, curriculum specialists, etc. (7)	Implementation/ Management	4.0
67. Selecting or developing appropriate test to match stated goals, objectives, and instruction. (1)	Planning/ Design	4.0
68. Being familiar with subject matter content in order to select or prepare lessons for successful student learning in that subject. (1)	Planning/ Design	4.0
69. Planning instruction and classroom procedures that will help students develop self-awareness, value clarification, self-control, etc., as well as acquire academic knowledge and skills. (1)	Planning/ Design	4.0
70. You will be able to develop an instructional strategy for a set of objectives for a particular group of learners. (4)	Planning/ Design	4.0
71. Selecting strategies for solving non-instructional problems. (6)	Planning/ Design	4.0
72. Planning instructional activities, materials and procedures that will facilitate outcome achievement and accomodate individual differences in learners. (7)	Planning/ Design	4.0
73. The participant will be able to successfully teach both a manipulative and related lesson in the classroom or laboratory using effective teaching techniques. (8)	Planning/ Design	4.0
74. The teacher will be able to prepare both students and facilities for instruction. (8)	Planning/ Design	4.0
75. Calculating normative scores such as means, medians, modes, percentiles etc. (1)	Assessment/ Evaluation	5.0

En-route	"systems" Model	System Model
76. Identifying criteria to evaluate commercially prepared instructional materials before adopting them for classroom use. (1)	Assessment/ Evaluation	4.0
77. Evaluating student learning performance, attitudes, and growth before, during, and after instruction. (1)	Assessment/ Evaluation	5.0
78. Constructing classroom tests to determine student performance on specified objectives. (1)	Assessment/ Evaluation	5.0
79. Interpreting performance scores such as those found on commercial achievement tests. (1)	Assessment/ Evaluation	5.0
80. Assist students to evaluate their own progress. (9)	Assessment/ Evaluation	5.0
81. Analyze tests for validity.	Assessment/ Evaluation	5.0
82. Analyze tests for reliability. (9)	Assessment/ Evaluation	5.0
83. Describe the purposes for and the various stages of formative evaluation and an individual instructional package. (3)	Assessment/ Evaluation	6.0
84. Describe the instruments used in a formative evaluation. (3)	Assessment/ Evaluation	6.0
85. Develop an appropriate formative evaluation plan and construct items for a set of instructional materials. (3)	Assessment/ Evaluation	6.0
86. Collect data according to a formative evaluation plan concerning the effectiveness of a given set of instructional materials. (3)	Assessment/ Evaluation	6.0
87. Describe various methods for summarizing data obtained from formative evaluation studies. (3)	Assessment/ Evaluation	6.0
88. Use summarized formative evaluation data to identify weaknesses in instructional materials. (3)	Assessment/ Evaluation	6.0

En-route	"systems" Model	System Model
89. Interpreting each student's performance on specified tasks as an indicator of what the student should be learning next. (1)	Assessment/ Evaluation	6.0
90. Given formative evaluation data for a set of instructional materials, identify problems in the materials, suggest revisions for the materials, and appropriately revise them. (3)	Assessment/ Evaluation	6.0
91. Conducting classroom assessments to identify student attitudes about instructional materials or classroom procedures. (1)	Assessment/ Evaluation	6.0
92. Conducting student assessments, both formal performance tests and informal progress checks, in a manner which does not threaten or intimidate students. (1)	Assessment/ Evaluation	5.0 and 6.0
93. Developing procedures to synthesize, analyze, and interpret data collected formally and informally on student performance, progress, and attitudes. (1)	Assessment/ Evaluation	5.0 and 6.0
94. Conduct a student follow-up study. (5)	Assessment/ Evaluation	6.0
95. Interpret students evaluation of instruction. (9)	Assessment/ Evaluation	5.0 and 6.0
96. Provide continuous feedback for learners on their educational progress. (2)	Assessment/ Evaluation	5.0 and 6.0
97. Obtain feedback on your program from school and commmunity. (5)	Assessment/ Evaluation	5.0 and 6.0
98. Identify needed program improvements through program evaluation. (5)	Assessment/ Evaluation	5.0 and 6.0
99. Describe the purposes for and the various stages of summative evaluation for an individualized instructional package. (4)	Assessment/ Evaluation	6.0
100. Describe the instruments used in a summative evaluation. (4)	Assessment/ Evaluation	6.0

En-route	"systems" Model	System Model
101. Develop an appropriate summative evaluation plan and construct items for a set of instructional materials. (4)	Assessment/ Evaluation	6.0
102. Collect data according to a summative evaluation plan concerning the effectiveness of a given set of instructional materials. (4)	Assessment/ Evaluation	6.0
103. Describe various methods for summarizing data obtained from summative evaluation studies. (4)	Assessment/ Evaluation	6.0
104. Use summarized summative evaluation data to identify weaknesses in instructional materials. (4)	Assessment/ Evaluation	6.0
105. Give summative evaluation data for a set of instructional materials, identify problems in the materials, suggest revisions for the materials, and appropriately revise them. (4)	Assessment/ Evaluation	6.0

Sources of Competency Statements:

1. Carey, Lou M. The investigation of self-evaluation procedures for identifying instructional needs of teachers. Unpublished doctoral dissertation, Florida State University, 1976.

2. Mann, Thomas W. Competencies for adult educators and an assessment inventory. Tallahassee, Fla.: Florida Department of Education, 1976.

3. Dick, Walter, and Carey, Lou M. The systematic design of instruction. Glenview, Ill.: Scott, Foresman, & Company, 1978.

4. Dick, Walter, and Carey, Lou M. Training for technical skills competencies. Final Report. Tallahassee, Fla.: Florida State University, College of Education, 1976.

5. Blank, William. Analysis of professional competencies important to Florida's community college technical instructors: Implications for competency-based teacher education. Unpublished doctoral dissertation, Florida State University, 1976.

6. Harrington, C. Tracy, and Johnson, B. F. Delivering competency-based vocational education. A teacher's guide to individualizing instruction. Tallahassee, Fla.: Florida Department of Education, 1976.

7. Coker, H., and Medley, D. M. (Eds.). Mandated competency-based teacher certification research in teacher assessment and the public interest. Carrollton, Ga.: West Georgia College, 1976.

8. School Board of Dade County. Performance based vocational teacher education. Series 1-14. Miami, Fla.: Author, 1974.

9. Hamilton, James B., and Huang, May W. Resource person guide to using performance-based teacher educational materials. Columbus, Ohio: Ohio State University, Center for Vocational Education, 1975.

10. Houston, W. Robert. Houston needs assessment system: Teacher competency-inventory -- a set of competencies for interaction and self-assessment. Houston, Tex.: University of Houston, 1972.

Appendix E
Professional Competencies Survey Instrument

VOCATIONAL EDUCATION TEACHER PROJECT
PROPOSED PROFESSIONAL COMPETENCIES

This document contains statements of professional vocational teacher competencies, developed by the Center for Needs Assessment and Planning at The Florida State University, in close cooperation with the Vocational Teacher Education Project (VTEP) Advisory Committee. This document has been derived from two sets of field validated vocational teacher education competencies[1].

The competency statements are organized into four categories:

- Planning & Development
- Implementation & Management
- Evaluation
- Professional Advancement

Please read each statement, and using your professional judgement, rate it by circling the accompanying rating scale (0,1,2,3,4). The accompanying rating scale includes the following choices:

0 - **Strongly Disagree** that the competency should be known and used to be a fully qualified vocational education teacher.

1 - **Disagree** that the competency should be known and used to be a fully qualified vocational education teacher.

2 - **Neither disagree or agree** that the competency should be known and used to be a fully qualified vocational education teacher.

3 - **Agree** that the competency should be known and used to be a fully qualified vocational education teacher.

4 - **Strongly agree** that the competency should be known and used to be a fully qualified vocational education teacher.

After reading and reviewing all statements, there are additional pages for your comments, suggestions, and or revisions about any statement(s). Also, please add any competencies you feel are missing or could be integrated with other competency statements. Upon completion of reading, reviewing, rating, and commenting about these statements, please return document in the self-addressed, pre-stamped envelope by **December 4, 1991**. Thank you in advance for your valuable input.

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[1]Each statement of professional competencies requires detailed analysis to determine specific component objectives, measurable student performance objectives, and indicators of success in mastering student performance and component objectives. This analysis must be on the basis of the specific occupational area for which teachers are being prepared. University Vocational Teacher Education faculty will be responsible for making this analysis. These objectives along with specific measurable performance indicators, will be the basis for planning courses and learning experiences which will result in fully qualified vocational education teachers.

Participant Information

Instructions: Locate the corresponding "Field Expert Group" that applies to you. On the same row, move over to the "Years of Experience" column and place a check mark in the category that applies. IF YOU ARE A TEACHER OR TEACHER EDUCATOR, on the same row, move over to the "Teaching Area" column and check the teaching are that applies to you.

	FIELD EXPERT GROUPS	YEARS OF EXPERIENCE			Teaching Area								
		0-5	5-10	10+	Agribusiness	Business	Diversified Ed	Health Occupation	Home Economics	Industrial	Marketing	Public Service	Technology Ed
SCHOOL DISTRICT	Middle School Principal												
	High School Principal												
	Middle School Vocational Teacher												
	High School Vocational Teacher												
	Post-Secondary Vocational Teacher												
	Vocational District Director												
	AVTC Director												
COMMUNITY COLLEGE	Occupational Dean												
	Occupation Teacher												
UNIVERSITY	Vocational Teacher Educator												
DEPT OF EDUCATION	DVACE												
	DPS												
	DCC												
	DHR												

VOCATIONAL EDUCATION TEACHER PROJECT
PROPOSED PROFESSIONAL COMPETENCIES

Directions: Read each competency listed below. Rate each competency, by circling a number on the rating scale (0 1 2 3 4 5), according to your professional judgement. Please select only one number (0 1 2 3 4 5) for each competency. Upon completion of reviewing and rating all competencies, please return this survey in the envelope provided. Thank you for your input.

PLANNING & DEVELOPMENT	Competency required to be demonstrated by a fully qualified vocational education teacher.					
	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Non-applicable
1. Establish and maintain an occupational advisory committee for the purposes of obtaining vocational education direction, guidance, and requirements for learner performance.	0	1	2	3	4	5
2. Develop and implement a valid occupational survey, obtain and analyze the results, and develop curriculum, course and learner performance recommendations for vocational programs.	0	1	2	3	4	5
3. Develop, promote, implement and evaluate a school-community relation program for vocational education which will result in maintaining and possibly increasing the number of learners enrolled, completed, and placed.	0	1	2	3	4	5
4. Evaluate the effectiveness of offered vocational programs, based on required job competencies.	0	1	2	3	4	5
5. Identify gaps/discrepancies between community requirements and the performance objectives of current vocational offerings.	0	1	2	3	4	5
6. Write results oriented goals and objects to close any gaps/discrepancies between occupational requirements and the performance objectives of vocational offerings.	0	1	2	3	4	5

PLANNING AND DEVELOPMENT (continued)	Competency required to be demonstrated by a fully qualified vocational education teacher.					
	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Non-applicable
7. Identify students requiring special services and or learning experiences e.g. students who are learning disabled, have behavior disorders, are emotionally impaired, or experience cultural barriers.	0	1	2	3	4	5
8. Prescribe the appropriate sources for students to receive special services and or learning experiences and assure that they are successfully delivered.	0	1	2	3	4	5
9. Develop and validate competency-based instructional materials for "special needs" student, in a vocational offering.	0	1	2	3	4	5
10. Plan and implement learning experiences which eliminate potential negative learner impact from cultural differences, gender, and equity biases.	0	1	2	3	4	5
11. Determine the skills, knowledges, abilities, and attitudes, required for a student to successfully complete a vocational offering.	0	1	2	3	4	5
12. Write, review and sequence measurable results-based student performance standards to close any gaps/discrepancies between the learners skills, knowledges, abilities, and attitudes, and those required to become productive workers and citizens in a specific occupation.	0	1	2	3	4	5

PLANNING AND DEVELOPMENT (continued)	Competency required to be demonstrated by a fully qualified vocational education teacher.					
	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Non-applicable
13. Develop a unit of instruction, including lesson plans, to close any gaps/discrepancies between the learners skills, knowledges, abilities, and attitudes and those required for mastery of job competencies of a specific vocational offering.	0	1	2	3	4	5
14. Prepare and or select instructional materials to achieve measurable results-based student performance objectives required for a course or unit of vocational instruction.	0	1	2	3	4	5
15. Implement instructional strategies and tactics which eliminates negative impact on learning due to individual learner differences as to motivation level and learning potential.	0	1	2	3	4	5
16. Organize and supervise vocational student organization(s) in a school setting so they will meet their objectives.	0	1	2	3	4	5
17. Plan, implement, and evaluate instruction for adult learners based on required competencies for the vocational offering.	0	1	2	3	4	5
18. Select and use educational media/ technologies to present a lesson or unit of instruction which will result in meeting course objectives.	0	1	2	3	4	5
19. Identify and obtain or develop remedial instructional materials which assist learners to successfully achieve required performance objectives for a unit of instruction for a specific vocational offering.	0	1	2	3	4	5

	Competency required to be demonstrated by a fully qualified vocational education teacher.					
PLANNING & DEVELOPMENT (continued)	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Non-applicable
20. Identify and integrate, into a vocational offering, related academic skills and knowledge based on required job and social competencies.	0	1	2	3	4	5
21. Plan and implement instruction which successfully develops critical thinking and problem-solving skills of learners.	0	1	2	3	4	5
22. Define and use the vision, philosophy, mission and objectives of vocational education as the basis for making professional decisions.	0	1	2	3	4	5
IMPLEMENTATION & MANAGEMENT						
23. Implement instructional strategies and tactics to motivate students which will improve reading, writing, mathematics, oral communication and personal development skills appropriate for job and social competencies of a vocational offering.	0	1	2	3	4	5
24. Identify, organize, schedule, obtain, and allocate classroom, laboratory, and shop instructional resources on the basis of student performance objectives and the job competencies of a vocational offering.	0	1	2	3	4	5
25. Demonstrate first-aid and safety procedures in vocational classroom, shop and laboratory settings which meet established workplace standards.	0	1	2	3	4	5

IMPLEMENTATION & MANAGEMENT (continued)	Competency required to be demonstrated by a fully qualified vocational education teacher.					
	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Non-applicable
26. Implement group dynamic strategies that develop learner skills required to work cooperatively and collaboratively with others to achieve specific objectives.	0	1	2	3	4	5
27. Develop and reinforce positive attitudes towards mutual respect in student/student and student/teacher relationships so that learners' performance will meet or exceed course/program objectives.	0	1	2	3	4	5
28. Develop and reinforce positive attitudes towards learning as a continual process and an individual responsibility so that learners performance will meet or exceed course/ program objectives.	0	1	2	3	4	5
29. Implement learning strategies which develop positive self esteem in learners which will result in their identifying and setting personal and vocational career goal(s).	0	1	2	3	4	5
30. Relate classroom, shop, and laboratory instruction to the responsibilities of becoming a self sufficient, self reliant, productive member of a community and society.	0	1	2	3	4	5
31. Identify, plan, manage, and report requirements for and utilization of instructional resources based on required job competencies and learner performance objectives.	0	1	2	3	4	5

EVALUATION	Competency required to be demonstrated by a fully qualified vocational education teacher.					
	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Non-applicable
32. Select and obtain or develop appropriate testing instruments to measure student's achievement based on the stated goals and student performance objectives for a course and unit of instruction for a vocational offering.	0	1	2	3	4	5
33. Evaluate students day to day progress based on the prescribed unit or lesson objectives, in a vocational offering, using properly written criterion referenced examination(s), essay(s), and performance check sheets representative of a job/task or product, and identify areas for further competency development.	0	1	2	3	4	5
34. Devise self-evaluation techniques for student's which accurately measure their level of achievement of performance objectives based on required job competencies for the vocational offering.	0	1	2	3	4	5
35. Analyze and interpret student performance measures on the basis of required job competencies for the vocational offering and use the data for feedback to learners for successful course delivery modification.	0	1	2	3	4	5
PROFESSIONAL ADVANCEMENT						
36. Keep up-to-date professionally through state, local, and national vocational organizations, short courses, seminars, personal readings, observations, and advanced degrees, which will maintain and improve teacher effectiveness and efficiency.	0	1	2	3	4	5

PROFESSIONAL ADVANCEMENT (continued)	Competency required to be demonstrated by a fully qualified vocational education teacher.					
	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Non-applicable
37. Teachers will conduct themselves and participate in a life-style perceived by peers and community to be ethical and professional.	0	1	2	3	4	5
38. Identify the linkages between one's vocational area and those of general and higher education, so that vocational learners will a) get and keep jobs in their job areas, b) identify additional and future job requirements, and c) continue to be contributing employees and citizens.	0	1	2	3	4	5
ADDITIONAL COMPETENCY STATEMENTS, COMMENTS AND SUGGESTIONS						

Appendix F
Data Tables from Survey Analyses

- **Competency Analysis from Aggregate (566) Survey Returns**

- **Competency Analysis from (317) Voc Ed Teacher Returns**
  Competency Analysis from 33 Middle School Teacher Returns
  Competency Analysis from 119 High School Teacher Returns
  Competency Analysis from 79 Post Secondary School Teacher Returns
  Competency Analysis from 86 Occupation Teacher Returns

- **Competency Analysis from (135) Voc Ed Administrator Returns**
  Competency Analysis from 15 Middle School Principal Returns
  Competency Analysis from 44 High School Principal Returns
  Competency Analysis from 44 Vocational District Director Returns
  Competency Analysis from 22 AVTC Director Returns
  Competency Analysis from 10 Occupational Dean Returns

- **Competency Analysis from (35) Vocational Teacher Educator Returns**

- **Competency Analysis from (21) DOE Returns**
  Competency Analysis from 16 DVACE Returns
  Competency Analysis from 2 DPS Returns
  Competency Analysis from 2 DCC Returns
  Competency Analysis from 1 DHR Returns

- **Competency Analysis from (1) FVA or F\COVE Return**

- **Competency Analysis from (46) Respondents Indicating More than One Field Expert Group Area**

- **Competency Analysis from (11) Respondents with Unknown Field Expert Group Area**

- **Competency Analysis by Teaching Area**
  Competency Analysis from 26 Agribusiness Teacher/Teacher Ed. Returns
  Competency Analysis from 68 Business Teacher/Teacher Ed. Returns
  Competency Analysis from 23 Diversified Ed. Teacher/Teacher Ed. Returns
  Competency Analysis from 61 Health Occ. Teacher/Teacher Ed. Returns
  Competency Analysis from 42 Home Ec. Teacher/Teacher Ed. Returns
  Competency Analysis from 85 Industrial Teacher/Teacher Ed. Returns
  Competency Analysis from 13 Marketing Teacher/Teacher Ed. Returns
  Competency Analysis from 12 Public Service Teacher/Teacher Ed. Returns
  Competency Analysis from 26 Technology Teacher/Teacher Ed. Returns
  Competency Analysis from 32 Dual Area Teacher/Teacher Ed. Returns
  Competency Analysis from 21 Unknown Field Teacher/Teacher Ed. Returns

- **Competency Analysis from Aggregate (566) Survey Returns by Years Experience**

VTEP SURVEY RETURNS
Aggregate Analysis (all 566 returns) by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	89%	5%	5%	1%
Item 2	80%	9%	9%	2%
Item 3	87%	6%	6%	1%
Item 4	90%	3%	5%	2%
Item 5	91%	3%	4%	2%
Item 6	90%	3%	6%	1%
Item 7	84%	7%	8%	1%
Item 8	79%	9%	10%	2%
Item 9	73%	11%	14%	2%
Item 10	83%	4%	10%	3%
Item 11	96%	1%	1%	2%
Item 12	88%	3%	8%	1%
Item 13	91%	2%	5%	2%
Item 14	97%	1%	2%	0%
Item 15	88%	2%	9%	1%
Item 16	74%	7%	18%	1%
Item 17	79%	3%	9%	9%
Item 18	94%	1%	3%	2%
Item 19	86%	5%	7%	2%
Item 20	94%	2%	3%	1%
Item 21	96%	1%	2%	1%
Item 22	86%	1%	12%	1%
Item 23	93%	2%	3%	2%
Item 24	95%	1%	3%	1%
Item 25	93%	1%	3%	3%
Item 26	91%	1%	7%	1%
Item 27	95%	1%	2%	2%
Item 28	96%	1%	2%	1%
Item 29	96%	1%	2%	1%
Item 30	97%	1%	1%	1%
Item 31	91%	2%	5%	2%
Item 32	95%	1%	3%	1%
Item 33	87%	6%	6%	1%
Item 34	88%	2%	8%	2%
Item 35	92%	1%	5%	2%
Item 36	96%	1%	2%	1%
Item 37	91%	3%	3%	3%
Item 38	95%	1%	2%	2%

VTEP SURVEY RETURNS
Analysis of 317 Teacher* Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	86%	6%	8%	0%
Item 2	78%	10%	10%	2%
Item 3	74%	6%	9%	1%
Item 4	87%	4%	7%	2%
Item 5	91%	3%	5%	1%
Item 6	87%	3%	8%	2%
Item 7	81%	7%	10%	2%
Item 8	76%	10%	12%	2%
Item 9	69%	12%	17%	2%
Item 10	78%	6%	14%	2%
Item 11	95%	2%	2%	1%
Item 12	86%	2%	11%	1%
Item 13	88%	1%	8%	3%
Item 14	95%	1%	3%	1%
Item 15	82%	4%	13%	1%
Item 16	63%	10%	26%	1%
Item 17	74%	3%	10%	13%
Item 18	93%	1%	5%	1%
Item 19	82%	5%	10%	3%
Item 20	92%	2%	5%	1%
Item 21	95%	1%	3%	1%
Item 22	83%	1%	14%	2%
Item 23	92%	3%	4%	1%
Item 24	93%	2%	3%	2%
Item 25	91%	1%	4%	4%
Item 26	88%	0%	10%	2%
Item 27	93%	1%	4%	2%
Item 28	95%	1%	3%	1%
Item 29	95%	1%	2%	2%
Item 30	95%	1%	2%	1%
Item 31	90%	2%	6%	2%
Item 32	93%	2%	4%	1%
Item 33	82%	8%	9%	1%
Item 34	85%	2%	11%	2%
Item 35	89%	1%	8%	2%
Item 36	96%	0%	2%	2%
Item 37	90%	4%	3%	3%
Item 38	94%	2%	2%	2%

*This analysis reflects the surveys returned by teachers (categories 3, 4, 5 & 9).

VTEP SURVEY RETURNS
Analysis of 33 Middle School Vocational Teacher Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	76%	3%	21%	0%
Item 2	82%	3%	15%	0%
Item 3	88%	3%	9%	0%
Item 4	85%	0%	12%	3%
Item 5	85%	0%	12%	3%
Item 6	82%	3%	12%	3%
Item 7	85%	9%	6%	0%
Item 8	76%	9%	12%	3%
Item 9	91%	6%	3%	0%
Item 10	91%	0%	6%	3%
Item 11	94%	0%	6%	0%
Item 12	85%	0%	15%	0%
Item 13	88%	0%	6%	6%
Item 14	100%	0%	0%	0%
Item 15	91%	0%	9%	0%
Item 16	67%	6%	27%	0%
Item 17	49%	3%	18%	30%
Item 18	97%	0%	3%	0%
Item 19	88%	0%	9%	3%
Item 20	91%	0%	6%	3%
Item 21	97%	0%	3%	0%
Item 22	88%	0%	12%	0%
Item 23	97%	0%	3%	0%
Item 24	91%	0%	6%	3%
Item 25	94%	0%	3%	3%
Item 26	97%	0%	3%	0%
Item 27	97%	0%	3%	0%
Item 28	100%	0%	0%	0%
Item 29	97%	0%	3%	0%
Item 30	94%	0%	3%	3%
Item 31	88%	0%	12%	0%
Item 32	91%	3%	6%	0%
Item 33	79%	9%	12%	0%
Item 34	91%	0%	9%	0%
Item 35	79%	0%	18%	3%
Item 36	94%	0%	0%	6%
Item 37	88%	3%	3%	6%
Item 38	94%	0%	3%	3%

VTEP SURVEY RETURNS
Analysis of 119 High School Vocational Teacher Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	82%	5%	13%	0%
Item 2	75%	11%	11%	3%
Item 3	84%	6%	8%	2%
Item 4	87%	5%	5%	3%
Item 5	91%	4%	4%	1%
Item 6	88%	4%	6%	2%
Item 7	82%	8%	8%	2%
Item 8	77%	10%	10%	3%
Item 9	72%	12%	13%	3%
Item 10	81%	6%	12%	1%
Item 11	97%	2%	1%	0%
Item 12	87%	3%	8%	2%
Item 13	89%	2%	8%	1%
Item 14	95%	1%	3%	1%
Item 15	87%	3%	9%	1%
Item 16	74%	6%	20%	0%
Item 17	56%	7%	13%	24%
Item 18	88%	2%	8%	2%
Item 19	83%	3%	10%	4%
Item 20	95%	2%	3%	0%
Item 21	96%	1%	2%	1%
Item 22	85%	2%	13%	0%
Item 23	92%	2%	3%	3%
Item 24	93%	3%	2%	2%
Item 25	92%	2%	2%	4%
Item 26	90%	1%	6%	3%
Item 27	95%	1%	2%	2%
Item 28	95%	1%	2%	2%
Item 29	95%	1%	2%	2%
Item 30	97%	1%	0%	2%
Item 31	89%	2%	7%	2%
Item 32	93%	3%	4%	0%
Item 33	86%	7%	6%	1%
Item 34	87%	4%	8%	1%
Item 35	90%	2%	6%	2%
Item 36	97%	1%	1%	1%
Item 37	96%	2%	1%	1%
Item 38	94%	2%	2%	2%

VTEP SURVEY RETURNS
Analysis of 79 Post Secondary Vocational Teacher Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	89%	9%	2%	0%
Item 2	76%	11%	11%	2%
Item 3	85%	6%	9%	0%
Item 4	89%	5%	6%	0%
Item 5	91%	5%	3%	1%
Item 6	91%	4%	4%	1%
Item 7	79%	9%	11%	1%
Item 8	73%	13%	14%	0%
Item 9	71%	14%	15%	0%
Item 10	72%	10%	17%	1%
Item 11	95%	3%	0%	2%
Item 12	87%	3%	10%	0%
Item 13	92%	1%	5%	2%
Item 14	96%	1%	3%	0%
Item 15	82%	5%	12%	1%
Item 16	61%	13%	25%	1%
Item 17	96%	0%	1%	3%
Item 18	96%	0%	3%	1%
Item 19	82%	9%	8%	1%
Item 20	87%	6%	7%	0%
Item 21	91%	3%	6%	0%
Item 22	85%	1%	13%	1%
Item 23	89%	5%	6%	0%
Item 24	98%	0%	1%	1%
Item 25	94%	0%	2%	4%
Item 26	86%	0%	11%	3%
Item 27	95%	3%	2%	0%
Item 28	95%	3%	2%	0%
Item 29	92%	2%	6%	0%
Item 30	96%	1%	3%	0%
Item 31	91%	4%	4%	1%
Item 32	96%	1%	3%	0%
Item 33	86%	5%	9%	0%
Item 34	90%	1%	8%	1%
Item 35	94%	0%	6%	0%
Item 36	100%	0%	0%	0%
Item 37	87%	8%	4%	1%
Item 38	98%	0%	2%	0%

VTEP SURVEY RETURNS
Analysis of 86 Occupation Teacher Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	93%	5%	1%	1%
Item 2	85%	9%	5%	1%
Item 3	80%	8%	11%	1%
Item 4	86%	4%	9%	1%
Item 5	92%	1%	6%	1%
Item 6	85%	1%	13%	1%
Item 7	83%	2%	10%	5%
Item 8	77%	7%	14%	2%
Item 9	55%	13%	30%	2%
Item 10	72%	3%	19%	6%
Item 11	93%	4%	2%	1%
Item 12	85%	1%	13%	1%
Item 13	84%	1%	12%	3%
Item 14	92%	2%	5%	1%
Item 15	72%	6%	20%	2%
Item 16	50%	14%	34%	2%
Item 17	87%	1%	9%	3%
Item 18	94%	0%	5%	1%
Item 19	78%	8%	12%	2%
Item 20	92%	1%	6%	1%
Item 21	95%	0%	4%	1%
Item 22	78%	1%	17%	4%
Item 23	90%	4%	4%	2%
Item 24	89%	2%	7%	2%
Item 25	86%	2%	8%	4%
Item 26	83%	0%	16%	1%
Item 27	86%	0%	10%	4%
Item 28	92%	0%	6%	2%
Item 29	97%	1%	0%	2%
Item 30	94%	2%	3%	1%
Item 31	91%	1%	5%	4%
Item 32	93%	1%	4%	2%
Item 33	73%	9%	13%	5%
Item 34	76%	2%	17%	5%
Item 35	85%	2%	9%	4%
Item 36	93%	0%	5%	2%
Item 37	86%	5%	3%	6%
Item 38	92%	2%	1%	5%

VTEP SURVEY RETURNS
Analysis of 135 Voc Ed Administrator* Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	90%	5%	3%	2%
Item 2	84%	7%	6%	3%
Item 3	92%	4%	3%	1%
Item 4	94%	2%	2%	2%
Item 5	93%	1%	4%	2%
Item 6	95%	2%	2%	1%
Item 7	89%	5%	6%	0%
Item 8	85%	8%	5%	2%
Item 9	81%	8%	10%	1%
Item 10	91%	2%	7%	0%
Item 11	97%	1%	1%	1%
Item 12	92%	4%	4%	0%
Item 13	97%	1%	2%	0%
Item 14	98%	1%	1%	0%
Item 15	98%	1%	1%	0%
Item 16	94%	2%	4%	0%
Item 17	85%	2%	7%	6%
Item 18	97%	1%	0%	2%
Item 19	91%	3%	4%	2%
Item 20	96%	2%	2%	0%
Item 21	98%	1%	0%	1%
Item 22	92%	1%	7%	0%
Item 23	97%	1%	1%	1%
Item 24	96%	1%	2%	1%
Item 25	96%	1%	2%	1%
Item 26	98%	1%	1%	0%
Item 27	99%	1%	0%	0%
Item 28	99%	1%	0%	0%
Item 29	98%	1%	1%	0%
Item 30	98%	1%	0%	1%
Item 31	94%	2%	3%	1%
Item 32	97%	1%	1%	1%
Item 33	94%	4%	1%	1%
Item 34	96%	1%	2%	1%
Item 35	96%	1%	1%	2%
Item 36	95%	1%	3%	1%
Item 37	93%	1%	5%	1%
Item 38	98%	1%	0%	1%

*This analysis reflects the surveys returned by Principals and Voc Ed administrators (categories1,2,& 6-8).

VTEP SURVEY RETURNS
Analysis of 15 Middle School Principal Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	100%	0%	0%	0%
Item 2	100%	0%	0%	0%
Item 3	100%	0%	0%	0%
Item 4	93%	0%	0%	7%
Item 5	100%	0%	0%	0%
Item 6	100%	0%	0%	0%
Item 7	86%	7%	7%	0%
Item 8	80%	7%	7%	6%
Item 9	93%	0%	7%	0%
Item 10	100%	0%	0%	0%
Item 11	100%	0%	0%	0%
Item 12	100%	0%	0%	0%
Item 13	100%	0%	0%	0%
Item 14	100%	0%	0%	0%
Item 15	100%	0%	0%	0%
Item 16	93%	0%	7%	0%
Item 17	86%	0%	7%	7%
Item 18	100%	0%	0%	0%
Item 19	100%	0%	0%	0%
Item 20	93%	0%	7%	0%
Item 21	100%	0%	0%	0%
Item 22	100%	0%	0%	0%
Item 23	100%	0%	0%	0%
Item 24	100%	0%	0%	0%
Item 25	100%	0%	0%	0%
Item 26	100%	0%	0%	0%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	100%	0%	0%	0%
Item 30	100%	0%	0%	0%
Item 31	100%	0%	0%	0%
Item 32	100%	0%	0%	0%
Item 33	100%	0%	0%	0%
Item 34	100%	0%	0%	0%
Item 35	100%	0%	0%	0%
Item 36	100%	0%	0%	0%
Item 37	100%	0%	0%	0%
Item 38	100%	0%	0%	0%

VTEP SURVEY RETURNS
Analysis of 44 High School Principal Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	77%	14%	7%	2%
Item 2	73%	11%	9%	7%
Item 3	84%	7%	7%	2%
Item 4	91%	5%	2%	2%
Item 5	84%	5%	7%	4%
Item 6	86%	7%	5%	2%
Item 7	89%	9%	2%	0%
Item 8	82%	14%	2%	2%
Item 9	82%	9%	7%	2%
Item 10	82%	4%	14%	0%
Item 11	96%	2%	2%	0%
Item 12	84%	11%	5%	0%
Item 13	91%	5%	4%	0%
Item 14	96%	2%	2%	0%
Item 15	96%	2%	2%	0%
Item 16	93%	2%	5%	0%
Item 17	68%	7%	14%	11%
Item 18	91%	2%	7%	0%
Item 19	89%	5%	4%	2%
Item 20	93%	5%	2%	0%
Item 21	96%	2%	0%	2%
Item 22	93%	2%	5%	0%
Item 23	96%	2%	2%	0%
Item 24	91%	2%	5%	2%
Item 25	91%	2%	2%	5%
Item 26	96%	2%	2%	0%
Item 27	98%	2%	0%	0%
Item 28	98%	2%	0%	0%
Item 29	93%	2%	5%	0%
Item 30	96%	2%	0%	2%
Item 31	89%	2%	5%	4%
Item 32	93%	2%	5%	0%
Item 33	84%	11%	5%	0%
Item 34	96%	2%	2%	0%
Item 35	94%	2%	2%	2%
Item 36	89%	2%	7%	2%
Item 37	94%	2%	2%	2%
Item 38	96%	2%	2%	0%

VTEP SURVEY RETURNS
Analysis of 44 Vocational District Director Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	91%	2%	2%	5%
Item 2	82%	9%	9%	0%
Item 3	96%	4%	0%	0%
Item 4	96%	2%	2%	0%
Item 5	98%	0%	2%	0%
Item 6	100%	0%	0%	0%
Item 7	86%	5%	9%	0%
Item 8	89%	4%	7%	0%
Item 9	80%	7%	13%	0%
Item 10	93%	0%	7%	0%
Item 11	98%	0%	2%	0%
Item 12	93%	0%	7%	0%
Item 13	100%	0%	0%	0%
Item 14	100%	0%	0%	0%
Item 15	100%	0%	0%	0%
Item 16	96%	2%	2%	0%
Item 17	91%	0%	5%	4%
Item 18	100%	0%	0%	0%
Item 19	93%	2%	5%	0%
Item 20	98%	2%	0%	0%
Item 21	100%	0%	0%	0%
Item 22	91%	0%	9%	0%
Item 23	98%	2%	0%	0%
Item 24	100%	0%	0%	0%
Item 25	98%	0%	2%	0%
Item 26	98%	0%	0%	2%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	100%	0%	0%	0%
Item 30	98%	0%	0%	2%
Item 31	93%	2%	5%	0%
Item 32	98%	0%	0%	2%
Item 33	98%	0%	0%	2%
Item 34	96%	0%	2%	2%
Item 35	96%	0%	2%	2%
Item 36	98%	0%	0%	2%
Item 37	93%	0%	7%	0%
Item 38	100%	0%	0%	0%

VTEP SURVEY RETURNS
Analysis of 22 AVTC Director Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	100%	0%	0%	0%
Item 2	100%	0%	0%	0%
Item 3	96%	0%	4%	0%
Item 4	100%	0%	0%	0%
Item 5	96%	0%	4%	0%
Item 6	100%	0%	0%	0%
Item 7	91%	0%	9%	0%
Item 8	91%	4%	5%	0%
Item 9	77%	9%	14%	0%
Item 10	100%	0%	0%	0%
Item 11	100%	0%	0%	0%
Item 12	96%	0%	4%	0%
Item 13	100%	0%	0%	0%
Item 14	100%	0%	0%	0%
Item 15	100%	0%	0%	0%
Item 16	96%	4%	0%	0%
Item 17	100%	0%	0%	0%
Item 18	100%	0%	0%	0%
Item 19	91%	4%	5%	0%
Item 20	100%	0%	0%	0%
Item 21	100%	0%	0%	0%
Item 22	91%	4%	5%	0%
Item 23	96%	0%	0%	4%
Item 24	96%	0%	4%	0%
Item 25	100%	0%	0%	0%
Item 26	100%	0%	0%	0%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	100%	0%	0%	0%
Item 30	100%	0%	0%	0%
Item 31	100%	0%	0%	0%
Item 32	100%	0%	0%	0%
Item 33	100%	0%	0%	0%
Item 34	100%	0%	0%	0%
Item 35	100%	0%	0%	0%
Item 36	96%	0%	4%	0%
Item 37	91%	0%	9%	0%
Item 38	100%	0%	0%	0%

VTEP SURVEY RETURNS
Analysis of 10 Occupational Dean Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	100%	0%	0%	0%
Item 2	90%	0%	0%	10%
Item 3	90%	0%	0%	10%
Item 4	90%	0%	0%	10%
Item 5	90%	0%	0%	10%
Item 6	90%	0%	0%	10%
Item 7	100%	0%	0%	0%
Item 8	70%	10%	10%	10%
Item 9	70%	10%	10%	10%
Item 10	90%	0%	10%	0%
Item 11	90%	0%	10%	0%
Item 12	100%	0%	0%	0%
Item 13	100%	0%	0%	0%
Item 14	100%	0%	0%	0%
Item 15	100%	0%	0%	0%
Item 16	90%	0%	10%	0%
Item 17	100%	0%	0%	0%
Item 18	100%	0%	0%	0%
Item 19	80%	0%	10%	10%
Item 20	100%	0%	0%	0%
Item 21	100%	0%	0%	0%
Item 22	80%	0%	20%	0%
Item 23	100%	0%	0%	0%
Item 24	100%	0%	0%	0%
Item 25	90%	0%	10%	0%
Item 26	100%	0%	0%	0%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	100%	0%	0%	0%
Item 30	100%	0%	0%	0%
Item 31	100%	0%	0%	0%
Item 32	100%	0%	0%	0%
Item 33	100%	0%	0%	0%
Item 34	90%	0%	10%	0%
Item 35	100%	0%	0%	0%
Item 36	100%	0%	0%	0%
Item 37	90%	0%	10%	0%
Item 38	100%	0%	0%	0%

VTEP SURVEY RETURNS
Analysis of 35 Vocational Teacher Educator Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	94%	3%	0%	3%
Item 2	86%	0%	4%	0%
Item 3	97%	0%	0%	3%
Item 4	94%	0%	3%	3%
Item 5	97%	0%	0%	3%
Item 6	97%	0%	3%	0%
Item 7	94%	0%	6%	0%
Item 8	94%	0%	6%	0%
Item 9	77%	11%	12%	0%
Item 10	94%	3%	0%	3%
Item 11	94%	0%	0%	6%
Item 12	94%	0%	3%	3%
Item 13	94%	0%	3%	3%
Item 14	100%	0%	0%	0%
Item 15	91%	0%	6%	3%
Item 16	89%	3%	8%	0%
Item 17	83%	3%	11%	3%
Item 18	97%	0%	0%	3%
Item 19	97%	0%	0%	3%
Item 20	97%	0%	0%	3%
Item 21	97%	0%	0%	3%
Item 22	94%	0%	3%	3%
Item 23	100%	0%	0%	0%
Item 24	97%	0%	3%	0%
Item 25	97%	0%	3%	0%
Item 26	100%	0%	0%	0%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	100%	0%	0%	0%
Item 30	100%	0%	0%	0%
Item 31	94%	0%	3%	3%
Item 32	94%	0%	6%	0%
Item 33	97%	3%	0%	0%
Item 34	89%	0%	8%	3%
Item 35	100%	0%	0%	0%
Item 36	100%	0%	0%	0%
Item 37	91%	3%	0%	6%
Item 38	97%	0%	0%	3%

VTEP SURVEY RETURNS
Analysis of 21 Department of Education* Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	90%	0%	5%	5%
Item 2	81%	9%	5%	5%
Item 3	81%	9%	5%	5%
Item 4	90%	5%	0%	5%
Item 5	90%	5%	5%	0%
Item 6	95%	0%	0%	5%
Item 7	81%	19%	0%	0%
Item 8	71%	19%	10%	0%
Item 9	71%	14%	10%	5%
Item 10	90%	5%	0%	5%
Item 11	90%	0%	5%	5%
Item 12	100%	0%	0%	0%
Item 13	91%	0%	0%	9%
Item 14	100%	0%	0%	0%
Item 15	95%	0%	0%	5%
Item 16	81%	5%	14%	0%
Item 17	86%	0%	14%	0%
Item 18	100%	0%	0%	0%
Item 19	90%	0%	10%	0%
Item 20	95%	0%	0%	5%
Item 21	90%	0%	5%	5%
Item 22	81%	5%	14%	0%
Item 23	90%	0%	0%	10%
Item 24	100%	0%	0%	0%
Item 25	95%	0%	0%	5%
Item 26	86%	0%	9%	5%
Item 27	95%	0%	0%	5%
Item 28	95%	0%	0%	5%
Item 29	95%	0%	0%	5%
Item 30	100%	0%	0%	0%
Item 31	95%	0%	5%	0%
Item 32	100%	0%	0%	0%
Item 33	95%	0%	5%	0%
Item 34	90%	5%	5%	0%
Item 35	95%	0%	0%	5%
Item 36	95%	0%	5%	0%
Item 37	85%	5%	5%	5%
Item 38	85%	0%	10%	5%

*This analysis reflects the surveys returned by Department of Education personnel (categories 11-14).

VTEP SURVEY RETURNS
Analysis of 16 DVACE Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	94%	0%	0%	6%
Item 2	81%	13%	0%	6%
Item 3	81%	6%	6%	7%
Item 4	88%	6%	0%	6%
Item 5	88%	6%	6%	0%
Item 6	94%	0%	0%	6%
Item 7	81%	19%	0%	0%
Item 8	75%	19%	6%	0%
Item 9	69%	19%	6%	6%
Item 10	94%	0%	0%	6%
Item 11	94%	0%	0%	6%
Item 12	100%	0%	0%	0%
Item 13	88%	0%	0%	12%
Item 14	100%	0%	0%	0%
Item 15	94%	0%	0%	6%
Item 16	81%	0%	19%	0%
Item 17	88%	0%	12%	0%
Item 18	100%	0%	0%	0%
Item 19	88%	0%	12%	0%
Item 20	94%	0%	0%	6%
Item 21	88%	0%	6%	6%
Item 22	81%	6%	13%	0%
Item 23	94%	0%	0%	6%
Item 24	100%	0%	0%	0%
Item 25	94%	0%	0%	6%
Item 26	88%	0%	6%	6%
Item 27	94%	0%	0%	6%
Item 28	94%	0%	0%	6%
Item 29	94%	0%	0%	6%
Item 30	100%	0%	0%	0%
Item 31	94%	0%	0%	6%
Item 32	100%	0%	0%	0%
Item 33	94%	0%	6%	0%
Item 34	88%	6%	6%	0%
Item 35	94%	0%	0%	6%
Item 36	94%	0%	6%	0%
Item 37	81%	6%	6%	7%
Item 38	81%	0%	13%	6%

VTEP SURVEY RETURNS
Analysis of 2 DPS Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	50%	0%	50%	0%
Item 2	100%	0%	0%	0%
Item 3	100%	0%	0%	0%
Item 4	100%	0%	0%	0%
Item 5	100%	0%	0%	0%
Item 6	100%	0%	0%	0%
Item 7	100%	0%	0%	0%
Item 8	100%	0%	0%	0%
Item 9	100%	0%	0%	0%
Item 10	50%	50%	0%	0%
Item 11	50%	0%	50%	0%
Item 12	100%	0%	0%	0%
Item 13	100%	0%	0%	0%
Item 14	100%	0%	0%	0%
Item 15	100%	0%	0%	0%
Item 16	100%	0%	0%	0%
Item 17	100%	0%	0%	0%
Item 18	100%	0%	0%	0%
Item 19	100%	0%	0%	0%
Item 20	100%	0%	0%	0%
Item 21	100%	0%	0%	0%
Item 22	100%	0%	0%	0%
Item 23	100%	0%	0%	0%
Item 24	100%	0%	0%	0%
Item 25	100%	0%	0%	0%
Item 26	100%	0%	0%	0%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	100%	0%	0%	0%
Item 30	100%	0%	0%	0%
Item 31	100%	0%	0%	0%
Item 32	100%	0%	0%	0%
Item 33	100%	0%	0%	0%
Item 34	100%	0%	0%	0%
Item 35	100%	0%	0%	0%
Item 36	100%	0%	0%	0%
Item 37	100%	0%	0%	0%
Item 38	100%	0%	0%	0%

VTEP SURVEY RETURNS
Analysis of 2 DCC Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	100%	0%	0%	0%
Item 2	50%	0%	50%	0%
Item 3	50%	50%	0%	0%
Item 4	100%	0%	0%	0%
Item 5	100%	0%	0%	0%
Item 6	100%	0%	0%	0%
Item 7	50%	50%	0%	0%
Item 8	50%	50%	0%	0%
Item 9	100%	0%	0%	0%
Item 10	100%	0%	0%	0%
Item 11	100%	0%	0%	0%
Item 12	100%	0%	0%	0%
Item 13	100%	0%	0%	0%
Item 14	100%	0%	0%	0%
Item 15	100%	0%	0%	0%
Item 16	50%	50%	0%	0%
Item 17	100%	0%	0%	0%
Item 18	100%	0%	0%	0%
Item 19	100%	0%	0%	0%
Item 20	100%	0%	0%	0%
Item 21	100%	0%	0%	0%
Item 22	50%	0%	50%	0%
Item 23	50%	0%	0%	50%
Item 24	100%	0%	0%	0%
Item 25	100%	0%	0%	0%
Item 26	50%	0%	50%	0%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	100%	0%	0%	0%
Item 30	100%	0%	0%	0%
Item 31	100%	0%	0%	0%
Item 32	100%	0%	0%	0%
Item 33	100%	0%	0%	0%
Item 34	100%	0%	0%	0%
Item 35	100%	0%	0%	0%
Item 36	100%	0%	0%	0%
Item 37	100%	0%	0%	0%
Item 38	100%	0%	0%	0%

VTEP SURVEY RETURNS
Analysis of 1 DHR Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	100%	0%	0%	0%
Item 2	100%	0%	0%	0%
Item 3	100%	0%	0%	0%
Item 4	100%	0%	0%	0%
Item 5	100%	0%	0%	0%
Item 6	100%	0%	0%	0%
Item 7	100%	0%	0%	0%
Item 8	0%	0%	100%	0%
Item 9	0%	0%	100%	0%
Item 10	100%	0%	0%	0%
Item 11	100%	0%	0%	0%
Item 12	100%	0%	0%	0%
Item 13	100%	0%	0%	0%
Item 14	100%	0%	0%	0%
Item 15	100%	0%	0%	0%
Item 16	100%	0%	0%	0%
Item 17	0%	0%	100%	0%
Item 18	100%	0%	0%	0%
Item 19	100%	0%	0%	0%
Item 20	100%	0%	0%	0%
Item 21	100%	0%	0%	0%
Item 22	100%	0%	0%	0%
Item 23	100%	0%	0%	0%
Item 24	100%	0%	0%	0%
Item 25	100%	0%	0%	0%
Item 26	100%	0%	0%	0%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	100%	0%	0%	0%
Item 30	100%	0%	0%	0%
Item 31	100%	0%	0%	0%
Item 32	100%	0%	0%	0%
Item 33	100%	0%	0%	0%
Item 34	100%	0%	0%	0%
Item 35	100%	0%	0%	0%
Item 36	100%	0%	0%	0%
Item 37	100%	0%	0%	0%
Item 38	100%	0%	0%	0%

VTEP SURVEY RETURNS
Analysis of 1 FVA or F/COVE Return by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	100%	0%	0%	0%
Item 2	100%	0%	0%	0%
Item 3	0%	0%	100%	0%
Item 4	100%	0%	0%	0%
Item 5	100%	0%	0%	0%
Item 6	0%	0%	100%	0%
Item 7	100%	0%	0%	0%
Item 8	100%	0%	0%	0%
Item 9	100%	0%	0%	0%
Item 10	100%	0%	0%	0%
Item 11	100%	0%	0%	0%
Item 12	100%	0%	0%	0%
Item 13	100%	0%	0%	0%
Item 14	100%	0%	0%	0%
Item 15	100%	0%	0%	0%
Item 16	100%	0%	0%	0%
Item 17	100%	0%	0%	0%
Item 18	100%	0%	0%	0%
Item 19	100%	0%	0%	0%
Item 20	100%	0%	0%	0%
Item 21	100%	0%	0%	0%
Item 22	100%	0%	0%	0%
Item 23	100%	0%	0%	0%
Item 24	100%	0%	0%	0%
Item 25	100%	0%	0%	0%
Item 26	100%	0%	0%	0%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	100%	0%	0%	0%
Item 30	100%	0%	0%	0%
Item 31	100%	0%	0%	0%
Item 32	100%	0%	0%	0%
Item 33	100%	0%	0%	0%
Item 34	100%	0%	0%	0%
Item 35	100%	0%	0%	0%
Item 36	100%	0%	0%	0%
Item 37	100%	0%	0%	0%
Item 38	100%	0%	0%	0%

VTEP SURVEY RETURNS
Analysis of 46 Dual Field* Expert Group Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	98%	0%	2%	0%
Item 2	76%	9%	13%	2%
Item 3	92%	4%	4%	0%
Item 4	91%	7%	2%	0%
Item 5	89%	9%	2%	0%
Item 6	89%	7%	4%	0%
Item 7	80%	9%	7%	4%
Item 8	76%	9%	9%	6%
Item 9	74%	9%	11%	6%
Item 10	83%	4%	6%	7%
Item 11	96%	0%	0%	4%
Item 12	85%	6%	7%	2%
Item 13	89%	7%	2%	2%
Item 14	98%	2%	0%	0%
Item 15	91%	0%	9%	0%
Item 16	76%	7%	15%	2%
Item 17	87%	2%	9%	2%
Item 18	94%	2%	2%	2%
Item 19	91%	7%	0%	2%
Item 20	96%	2%	2%	0%
Item 21	96%	4%	0%	0%
Item 22	83%	0%	17%	0%
Item 23	96%	4%	0%	0%
Item 24	96%	4%	0%	0%
Item 25	94%	0%	2%	4%
Item 26	89%	2%	7%	2%
Item 27	96%	0%	2%	2%
Item 28	98%	0%	2%	0%
Item 29	98%	0%	2%	0%
Item 30	98%	0%	2%	0%
Item 31	91%	2%	7%	0%
Item 32	91%	2%	5%	2%
Item 33	90%	6%	2%	2%
Item 34	87%	4%	4%	5%
Item 35	92%	0%	4%	4%
Item 36	94%	4%	0%	2%
Item 37	89%	4%	5%	2%
Item 38	94%	0%	4%	2%

*This analysis reflects the surveys returned by those indicating two or more expert field group areas.

VTEP SURVEY RETURNS
Analysis of 11 Unknown Expert Field Group Returns by Competency

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	100%	0%	0%	0%
Item 2	73%	18%	9%	0%
Item 3	82%	18%	0%	0%
Item 4	100%	0%	0%	0%
Item 5	91%	0%	9%	0%
Item 6	91%	0%	9%	0%
Item 7	91%	0%	9%	0%
Item 8	73%	18%	9%	0%
Item 9	73%	18%	9%	0%
Item 10	82%	9%	9%	0%
Item 11	100%	0%	0%	0%
Item 12	100%	0%	0%	0%
Item 13	91%	0%	0%	9%
Item 14	100%	0%	0%	0%
Item 15	91%	0%	9%	0%
Item 16	100%	0%	0%	0%
Item 17	73%	0%	18%	9%
Item 18	100%	0%	0%	0%
Item 19	91%	9%	0%	0%
Item 20	100%	0%	0%	0%
Item 21	100%	0%	0%	0%
Item 22	91%	0%	9%	0%
Item 23	82%	0%	9%	9%
Item 24	100%	0%	0%	0%
Item 25	100%	0%	0%	0%
Item 26	82%	0%	18%	0%
Item 27	100%	0%	0%	0%
Item 28	100%	0%	0%	0%
Item 29	82%	0%	18%	0%
Item 30	100%	0%	0%	0%
Item 31	82%	0%	18%	0%
Item 32	100%	0%	0%	0%
Item 33	100%	0%	0%	0%
Item 34	82%	0%	18%	0%
Item 35	91%	0%	9%	0%
Item 36	100%	0%	0%	0%
Item 37	100%	0%	0%	0%
Item 38	100%	0%	0%	0%

VTEP SURVEY RETURNS
Analysis of 26 Agribusiness Teacher/Teacher Ed.* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	0%	96%	4%	0%
Item 2	4%	65%	31%	0%
Item 3	0%	92%	8%	0%
Item 4	4%	92%	4%	0%
Item 5	0%	85%	15%	0%
Item 6	0%	88%	12%	0%
Item 7	8%	84%	8%	0%
Item 8	0%	85%	11%	4%
Item 9	19%	50%	19%	12%
Item 10	4%	93%	0%	3%
Item 11	4%	92%	0%	4%
Item 12	8%	84%	4%	4%
Item 13	8%	84%	4%	4%
Item 14	0%	92%	8%	0%
Item 15	8%	77%	15%	0%
Item 16	4%	84%	12%	0%
Item 17	0%	62%	19%	19%
Item 18	0%	92%	4%	4%
Item 19	4%	81%	11%	4%
Item 20	4%	92%	4%	0%
Item 21	0%	100%	0%	0%
Item 22	0%	73%	23%	4%
Item 23	4%	96%	0%	0%
Item 24	0%	92%	8%	0%
Item 25	0%	100%	0%	0%
Item 26	0%	92%	4%	4%
Item 27	0%	92%	0%	8%
Item 28	0%	92%	0%	8%
Item 29	0%	92%	0%	8%
Item 30	0%	96%	0%	4%
Item 31	0%	92%	0%	8%
Item 32	4%	84%	12%	0%
Item 33	8%	85%	0%	7%
Item 34	0%	88%	12%	0%
Item 35	4%	88%	8%	0%
Item 36	0%	100%	0%	0%
Item 37	4%	96%	0%	0%
Item 38	4%	92%	4%	0%

*This analysis reflects survey responses from 23 agribusiness teachers and 3 agribusiness teacher educators.

VTEP SURVEY RETURNS
Analysis of 68 BusinessTeacher/Teacher Educator* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	3%	87%	7%	3%
Item 2	6%	84%	9%	1%
Item 3	3%	84%	10%	3%
Item 4	0%	87%	9%	4%
Item 5	3%	91%	3%	3%
Item 6	6%	87%	6%	1%
Item 7	10%	83%	7%	0%
Item 8	10%	81%	9%	0%
Item 9	12%	81%	7%	0%
Item 10	6%	82%	12%	0%
Item 11	1%	98%	1%	0%
Item 12	3%	93%	4%	0%
Item 13	1%	89%	9%	1%
Item 14	3%	95%	1%	1%
Item 15	1%	86%	13%	0%
Item 16	9%	67%	25%	0%
Item 17	9%	75%	9%	7%
Item 18	0%	90%	10%	0%
Item 19	3%	90%	7%	0%
Item 20	0%	93%	7%	0%
Item 21	0%	93%	7%	0%
Item 22	1%	83%	16%	0%
Item 23	0%	94%	6%	0%
Item 24	0%	97%	3%	0%
Item 25	1%	84%	6%	9%
Item 26	0%	90%	10%	0%
Item 27	0%	93%	7%	0%
Item 28	0%	97%	3%	0%
Item 29	0%	96%	4%	0%
Item 30	0%	100%	0%	0%
Item 31	3%	85%	12%	0%
Item 32	1%	97%	1%	1%
Item 33	7%	80%	12%	1%
Item 34	4%	82%	13%	1%
Item 35	1%	89%	7%	3%
Item 36	0%	98%	1%	1%
Item 37	3%	93%	4%	0%
Item 38	1%	98%	1%	0%

*This analysis reflects survey responses from 65 business teachers and 3 business teacher educators.

VTEP SURVEY RETURNS
Analysis of 23 Diversified Ed Teacher/Teacher Ed.* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	17%	70%	13%	0%
Item 2	9%	65%	22%	4%
Item 3	13%	78%	9%	0%
Item 4	4%	83%	9%	4%
Item 5	0%	83%	13%	4%
Item 6	0%	83%	13%	4%
Item 7	17%	79%	0%	4%
Item 8	13%	78%	9%	0%
Item 9	17%	70%	13%	0%
Item 10	13%	76%	13%	0%
Item 11	0%	100%	0%	0%
Item 12	0%	91%	9%	0%
Item 13	0%	96%	4%	0%
Item 14	0%	100%	0%	0%
Item 15	4%	83%	13%	0%
Item 16	0%	56%	44%	0%
Item 17	4%	53%	30%	13%
Item 18	0%	92%	4%	4%
Item 19	0%	83%	13%	4%
Item 20	4%	92%	4%	0%
Item 21	0%	100%	0%	0%
Item 22	0%	91%	9%	0%
Item 23	0%	100%	0%	0%
Item 24	9%	87%	4%	0%
Item 25	0%	96%	4%	0%
Item 26	0%	87%	13%	0%
Item 27	0%	100%	0%	0%
Item 28	0%	96%	4%	0%
Item 29	0%	100%	0%	0%
Item 30	0%	100%	0%	0%
Item 31	9%	91%	0%	0%
Item 32	0%	96%	4%	0%
Item 33	13%	83%	4%	0%
Item 34	4%	83%	13%	0%
Item 35	4%	87%	9%	0%
Item 36	0%	100%	0%	0%
Item 37	0%	100%	0%	0%
Item 38	0%	100%	0%	0%

*This analysis reflects survey responses from 21 DE teachers and 2 DE teacher educators.

VTEP SURVEY RETURNS
Analysis of 61 Health Occ. Teacher & Teacher Ed.* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	8%	90%	2%	0%
Item 2	15%	80%	3%	2%
Item 3	11%	82%	5%	2%
Item 4	5%	92%	1%	2%
Item 5	2%	98%	0%	0%
Item 6	2%	96%	0%	2%
Item 7	5%	87%	5%	3%
Item 8	12%	79%	7%	2%
Item 9	12%	70%	18%	0%
Item 10	2%	85%	10%	3%
Item 11	2%	96%	2%	0%
Item 12	3%	97%	0%	0%
Item 13	0%	94%	3%	3%
Item 14	2%	95%	3%	0%
Item 15	3%	89%	8%	0%
Item 16	11%	69%	20%	0%
Item 17	0%	90%	3%	7%
Item 18	2%	93%	3%	2%
Item 19	8%	85%	5%	2%
Item 20	0%	98%	2%	0%
Item 21	0%	98%	2%	0%
Item 22	2%	83%	15%	0%
Item 23	3%	94%	3%	0%
Item 24	0%	98%	2%	0%
Item 25	0%	98%	2%	0%
Item 26	0%	97%	3%	0%
Item 27	0%	97%	3%	0%
Item 28	0%	97%	3%	0%
Item 29	0%	100%	0%	0%
Item 30	2%	96%	2%	0%
Item 31	0%	95%	3%	2%
Item 32	0%	96%	2%	2%
Item 33	2%	94%	2%	2%
Item 34	0%	96%	2%	2%
Item 35	2%	93%	3%	2%
Item 36	3%	97%	0%	0%
Item 37	5%	89%	0%	6%
Item 38	0%	91%	2%	7%

*This analysis reflects survey responses from 57 health occupation teachers and 4 health occupation teacher educators.

VTEP SURVEY RETURNS
Analysis of 42 Home Ec. Teacher & Teacher Ed.* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	0%	88%	12%	0%
Item 2	5%	83%	7%	5%
Item 3	2%	91%	2%	5%
Item 4	5%	91%	2%	2%
Item 5	2%	94%	2%	2%
Item 6	2%	96%	0%	2%
Item 7	7%	89%	2%	2%
Item 8	10%	78%	7%	5%
Item 9	10%	78%	10%	2%
Item 10	0%	93%	7%	0%
Item 11	0%	100%	0%	0%
Item 12	2%	84%	12%	2%
Item 13	2%	91%	0%	7%
Item 14	0%	98%	2%	0%
Item 15	0%	88%	10%	2%
Item 16	14%	74%	10%	2%
Item 17	5%	66 %	12%	17%
Item 18	0%	93%	5%	2%
Item 19	0%	85%	10%	5%
Item 20	0%	98%	2%	0%
Item 21	0%	98%	0%	2%
Item 22	0%	90%	10%	0%
Item 23	0%	95%	0%	5%
Item 24	0%	90%	0%	10%
Item 25	0%	90%	5%	5%
Item 26	0%	93%	5%	2%
Item 27	0%	93%	0%	7%
Item 28	0%	96%	2%	2%
Item 29	0%	91%	2%	7%
Item 30	0%	93%	0%	7%
Item 31	0%	91%	7%	2%
Item 32	5%	93%	2%	0%
Item 33	7%	81%	12%	0%
Item 34	2%	86%	7%	5%
Item 35	0%	86%	7%	7%
Item 36	0%	91%	2%	7%
Item 37	7%	84%	2%	7%
Item 38	0%	91%	2%	7%

*This analysis reflects survey responses from 39 home economics teachers and 3 home economics teacher educators.

VTEP SURVEY RETURNS
Analysis of 85 Industrial Teacher/Teacher Ed* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	5%	93%	2%	0%
Item 2	7%	81%	11%	1%
Item 3	6%	88%	6%	0%
Item 4	2%	87%	11%	0%
Item 5	4%	92%	4%	0%
Item 6	3%	86%	11%	0%
Item 7	2%	84%	12%	2%
Item 8	8%	74%	14%	4%
Item 9	11%	68%	19%	2%
Item 10	8%	71%	19%	2%
Item 11	0%	95%	1%	4%
Item 12	1%	83%	15%	1%
Item 13	0%	90%	9%	1%
Item 14	1%	95%	2%	1%
Item 15	5%	79%	14%	2%
Item 16	7%	65%	26%	2%
Item 17	1%	86%	6%	7%
Item 18	1%	95%	2%	1%
Item 19	6%	83%	7%	4%
Item 20	7%	86%	6%	1%
Item 21	2%	91%	5%	2%
Item 22	0%	83%	13%	4%
Item 23	6%	89%	4%	1%
Item 24	1%	93%	4%	2%
Item 25	1%	93%	2%	4%
Item 26	0%	85%	10%	5%
Item 27	2%	95%	2%	1%
Item 28	2%	96%	1%	1%
Item 29	2%	96%	1%	1%
Item 30	2%	95%	2%	1%
Item 31	2%	89%	7%	2%
Item 32	2%	95%	2%	1%
Item 33	6%	86%	7%	1%
Item 34	1%	88%	9%	2%
Item 35	0%	91%	8%	1%
Item 36	0%	98%	1%	1%
Item 37	1%	92%	6%	1%
Item 38	0%	98%	1%	1%

*This analysis reflects survey responses from 79 industrial teachers and 6 industrial teacher educators.

VTEP SURVEY RETURNS
Analysis of 13 Marketing Teacher/Teacher Ed* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	0%	92%	8%	0%
Item 2	15%	77%	8%	0%
Item 3	0%	85%	15%	0%
Item 4	15%	85%	0%	0%
Item 5	0%	100%	0%	0%
Item 6	8%	92%	0%	0%
Item 7	8%	92%	0%	0%
Item 8	8%	92%	0%	0%
Item 9	8%	69%	23%	0%
Item 10	8%	84%	8%	0%
Item 11	0%	100%	0%	0%
Item 12	0%	92%	8%	0%
Item 13	0%	92%	0%	8%
Item 14	0%	100%	0%	0%
Item 15	0%	92%	8%	0%
Item 16	0%	85%	15%	0%
Item 17	0%	69%	8%	23%
Item 18	0%	100%	0%	0%
Item 19	15%	85%	0%	0%
Item 20	0%	100%	0%	0%
Item 21	0%	100%	0%	0%
Item 22	0%	100%	0%	0%
Item 23	0%	100%	0%	0%
Item 24	0%	100%	0%	0%
Item 25	0%	92%	0%	8%
Item 26	0%	92%	0%	8%
Item 27	0%	100%	0%	0%
Item 28	0%	100%	0%	0%
Item 29	0%	100%	0%	0%
Item 30	0%	100%	0%	0%
Item 31	0%	100%	0%	0%
Item 32	0%	100%	0%	0%
Item 33	8%	84%	8%	0%
Item 34	0%	92%	8%	0%
Item 35	0%	92%	8%	0%
Item 36	0%	100%	0%	0%
Item 37	0%	100%	0%	0%
Item 38	0%	100%	0%	0%

*This analysis reflects survey responses from 11 marketing teachers and 2 marketing teacher educators.

VTEP SURVEY RETURNS
Analysis of 12 Public Svc. Teacher/Teacher Ed.* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	8%	84%	8%	0%
Item 2	8%	92%	0%	0%
Item 3	16%	84%	0%	0%
Item 4	8%	92%	0%	0%
Item 5	8%	84%	8%	0%
Item 6	8%	84%	8%	0%
Item 7	8%	67%	17%	8%
Item 8	8%	84%	8%	0%
Item 9	25%	42%	25%	8%
Item 10	8%	51%	25%	16%
Item 11	0%	92%	0%	8%
Item 12	0%	84%	8%	8%
Item 13	8%	84%	0%	8%
Item 14	0%	100%	0%	0%
Item 15	0%	66%	17%	17%
Item 16	8%	50%	34%	8%
Item 17	0%	75%	0%	25%
Item 18	0%	92%	0%	8%
Item 19	0%	84%	8%	8%
Item 20	0%	92%	0%	8%
Item 21	0%	84%	8%	8%
Item 22	0%	84%	8%	8%
Item 23	0%	100%	0%	0%
Item 24	8%	84%	0%	8%
Item 25	0%	83%	17%	0%
Item 26	0%	92%	8%	0%
Item 27	0%	75%	17%	8%
Item 28	0%	100%	0%	0%
Item 29	0%	92%	8%	0%
Item 30	0%	100%	0%	0%
Item 31	0%	92%	0%	8%
Item 32	0%	100%	0%	0%
Item 33	8%	75%	17%	0%
Item 34	0%	58%	42%	0%
Item 35	0%	92%	8%	0%
Item 36	0%	100%	0%	0%
Item 37	0%	84%	8%	8%
Item 38	0%	75%	17%	8%

*This analysis reflects survey responses from 10 public service teachers and 2 public service teacher educators.

VTEP SURVEY RETURNS
Analysis of 26 Technology Teacher/Teacher Ed* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	0%	85%	15%	0%
Item 2	11%	77%	8%	4%
Item 3	0%	92%	8%	0%
Item 4	0%	88%	8%	4%
Item 5	0%	88%	8%	4%
Item 6	0%	85%	11%	4%
Item 7	4%	81%	15%	0%
Item 8	8%	65%	27%	0%
Item 9	4%	77%	19%	0%
Item 10	8%	84%	0%	8%
Item 11	8%	84%	8%	0%
Item 12	4%	77%	19%	0%
Item 13	0%	85%	15%	0%
Item 14	0%	100%	0%	0%
Item 15	4%	88%	8%	0%
Item 16	15%	54%	31%	0%
Item 17	0%	66%	15%	19%
Item 18	0%	92%	4%	4%
Item 19	0%	84%	8%	8%
Item 20	0%	88%	8%	4%
Item 21	0%	92%	8%	0%
Item 22	0%	81%	15%	4%
Item 23	0%	88%	12%	0%
Item 24	0%	96%	4%	0%
Item 25	4%	92%	4%	0%
Item 26	0%	89%	11%	0%
Item 27	0%	96%	0%	4%
Item 28	0%	96%	4%	0%
Item 29	0%	100%	0%	0%
Item 30	0%	96%	4%	0%
Item 31	4%	96%	0%	0%
Item 32	0%	100%	0%	0%
Item 33	15%	77%	4%	4%
Item 34	4%	80%	8%	8%
Item 35	0%	88%	8%	4%
Item 36	0%	92%	8%	0%
Item 37	4%	84%	4%	8%
Item 38	4%	92%	4%	0%

*This analysis reflects survey responses from 22 technology teachers and 4 technology teacher educators.

VTEP SURVEY RETURNS
Analysis of 32 Dual Area Teacher/Teacher Ed* Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	3%	88%	9%	0%
Item 2	9%	75%	16%	0%
Item 3	3%	81%	16%	0%
Item 4	6%	88%	6%	0%
Item 5	9%	91%	0%	0%
Item 6	6%	88%	6%	0%
Item 7	3%	75%	19%	3%
Item 8	9%	69%	16%	6%
Item 9	3%	69%	28%	0%
Item 10	0%	87%	13%	0%
Item 11	3%	94%	3%	0%
Item 12	3%	84%	13%	0%
Item 13	3%	85%	12%	0%
Item 14	6%	94%	0%	0%
Item 15	3%	97%	0%	0%
Item 16	6%	72%	22%	0%
Item 17	6%	76%	9%	9%
Item 18	0%	100%	0%	0%
Item 19	6%	85%	9%	0%
Item 20	0%	100%	0%	0%
Item 21	0%	100%	0%	0%
Item 22	3%	85%	12%	0%
Item 23	3%	91%	3%	3%
Item 24	3%	91%	6%	0%
Item 25	0%	91%	6%	3%
Item 26	3%	85%	12%	0%
Item 27	0%	91%	9%	0%
Item 28	0%	94%	6%	0%
Item 29	0%	100%	0%	0%
Item 30	0%	96%	4%	0%
Item 31	4%	87%	9%	0%
Item 32	0%	81%	19%	0%
Item 33	3%	84%	13%	0%
Item 34	3%	85%	9%	3%
Item 35	0%	94%	3%	3%
Item 36	0%	94%	3%	3%
Item 37	9%	91%	0%	0%
Item 38	3%	97%	0%	0%

*This analysis reflects survey responses from 26 dual area teachers and 6 dual area teacher educators.

VTEP SURVEY RETURNS
Analysis of 21 Unknown Field Teacher Returns by Competency

	Disagree or Strongly Disagree	Agree or Strongly Agree	Neither Disagree or Agree	Not Applicable or No Response
Item 1	10%	90%	0%	0%
Item 2	19%	71%	10%	0%
Item 3	14%	81%	5%	0%
Item 4	10%	85%	5%	0%
Item 5	14%	76%	10%	0%
Item 6	5%	81%	14%	0%
Item 7	10%	75%	10%	5%
Item 8	10%	75%	10%	5%
Item 9	24%	66%	5%	5%
Item 10	5%	75%	10%	10%
Item 11	5%	90%	0%	5%
Item 12	10%	80%	5%	5%
Item 13	5%	85%	5%	5%
Item 14	5%	95%	0%	0%
Item 15	5%	76%	19%	0%
Item 16	10%	76%	14%	0%
Item 17	0%	81%	14%	5%
Item 18	5%	90%	5%	0%
Item 19	19%	76%	5%	0%
Item 20	5%	90%	5%	0%
Item 21	5%	95%	0%	0%
Item 22	5%	85%	10%	0%
Item 23	10%	76%	5%	9%
Item 24	10%	90%	0%	0%
Item 25	5%	90%	0%	5%
Item 26	5%	71%	19%	5%
Item 27	5%	95%	0%	0%
Item 28	5%	90%	5%	0%
Item 29	5%	76%	19%	0%
Item 30	5%	90%	5%	0%
Item 31	14%	86%	0%	0%
Item 32	5%	90%	5%	0%
Item 33	10%	85%	5%	0%
Item 34	10%	76%	14%	0%
Item 35	0%	86%	14%	0%
Item 36	5%	95%	0%	0%
Item 37	10%	85%	0%	5%
Item 38	5%	95%	0%	0%

VTEP SURVEY RETURNS

Aggregate Analysis (all 566 returns) by Years Experience*

(Overall response rate by years: 0-5 Years 14% 5-10 Years 19% 10 or More Years 58% Unknown Years 9%)

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 1 Total	**89%**	**5%**	**5%**	**1%**
0-5 Years	90%	6%	3%	1%
5-10 Years	86%	5%	8%	1%
10 or More Years	89%	4%	6%	1%
Unknown Years	93%	7%	0%	0%
Item 2 Total	**80%**	**9%**	**9%**	**2%**
0-5 Years	81%	10%	8%	1%
5-10 Years	76%	10%	11%	3%
10 or More Years	80%	7%	10%	3%
Unknown Years	87%	9%	4%	0%
Item 3 Total	**87%**	**6%**	**6%**	**1%**
0-5 Years	87%	8%	3%	2%
5-10 Years	84%	6%	9%	1%
10 or More Years	88%	5%	6%	1%
Unknown Years	85%	8%	7%	0%
Item 4 Total	**90%**	**3%**	**5%**	**2%**
0-5 Years	92%	1%	4%	3%
5-10 Years	88%	6%	5%	1%
10 or More Years	90%	3%	5%	2%
Unknown Years	85%	6%	7%	2%
Item 5 Total	**91%**	**3%**	**4%**	**2%**
0-5 Years	90%	4%	5%	1%
5-10 Years	93%	4%	1%	2%
10 or More Years	91%	2%	6%	1%
Unknown Years	92%	6%	2%	%
Item 6 Total	**90%**	**3%**	**6%**	**1%**
0-5 Years	90%	8%	1%	1%
5-10 Years	92%	1%	5%	2%
10 or More Years	90%	2%	7%	1%
Unknown Years	89%	6%	5%	0%
Item 7 Total	**84%**	**7%**	**8%**	**1%**
0-5 Years	86%	9%	4%	1%
5-10 Years	85%	8%	5%	2%
10 or More Years	83%	5%	10%	2%
Unknown Years	85%	9%	6%	0%
Item 8 Total	**79%**	**9%**	**10%**	**2%**
0-5 Years	80%	14%	6%	0%
5-10 Years	75%	9%	11%	5%
10 or More Years	81%	8%	9%	2%
Unknown Years	75%	8%	15%	2%

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 9 Total	**73%**	**11%**	**14%**	**2%**
0-5 Years	72%	19%	9%	0%
5-10 Years	72%	7%	19%	2%
10 or More Years	73%	10%	14%	3%
Unknown Years	77%	11%	12%	0%
Item 10 Total	**83%**	**4%**	**10%**	**3%**
0-5 Years	86%	6%	4%	4%
5-10 Years	81%	3%	12%	4%
10 or More Years	83%	4%	12%	1%
Unknown Years	83%	7%	8%	2%
Item 11 Total	**96%**	**1%**	**1%**	**2%**
0-5 Years	92%	3%	1%	4%
5-10 Years	99%	0%	0%	1%
10 or More Years	95%	1%	2%	2%
Unknown Years	96%	2%	2%	0%
Item 12 Total	**88%**	**3%**	**8%**	**1%**
0-5 Years	86%	3%	10%	1%
5-10 Years	8%	4%	87%	1%
10 or More Years	89%	2%	8%	1%
Unknown Years	92%	6%	2%	0%
Item 13 Total	**91%**	**2%**	**5%**	**2%**
0-5 Years	92%	2%	4%	2%
5-10 Years	90%	2%	5%	3%
10 or More Years	92%	1%	5%	2%
Unknown Years	87%	4%	5%	4%
Item 14 Total	**97%**	**1%**	**2%**	**0%**
0-5 Years	99%	1%	0%	0%
5-10 Years	95%	2%	3%	0%
10 or More Years	98%	0%	1%	1%
Unknown Years	91%	4%	5%	0%
Item 15 Total	**88%**	**2%**	**9%**	**1%**
0-5 Years	84%	2%	11%	3%
5-10 Years	91%	1%	7%	1%
10 or More Years	89%	2%	8%	1%
Unknown Years	83%	6%	11%	0%
Item 16 Total	**74%**	**7%**	**18%**	**1%**
0-5 Years	77%	8%	15%	0%
5-10 Years	71%	9%	19%	1%
10 or More Years	75%	5%	19%	1%
Unknown Years	76%	11%	13%	0%

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 17 Total	**79%**	**3%**	**9%**	**9%**
0-5 Years	73%	3%	10%	14%
5-10 Years	81%	1%	11%	7%
10.or More Years	79%	3%	8%	10%
Unknown Years	81%	4%	11%	4%
Item 18 Total	**94%**	**1%**	**3%**	**2%**
0-5 Years	96%	3%	0%	1%
5-10 Years	94%	0%	4%	2%
10 or More Years	95%	0%	3%	2%
Unknown Years	92%	4%	4%	0%
Item 19 Total	**86%**	**5%**	**7%**	**2%**
0-5 Years	82%	10%	4%	4%
5-10 Years	91%	4%	5%	0%
10 or More Years	86%	3%	8%	3%
Unknown Years	85%	7%	8%	0%
Item 20 Total	**94%**	**2%**	**3%**	**1%**
0-5 Years	86%	4%	8%	2%
5-10 Years	96%	2%	1%	1%
10 or More Years	95%	2%	3%	0%
Unknown Years	94%	2%	4%	0%
Item 21 Total	**96%**	**1%**	**2%**	**1%**
0-5 Years	91%	1%	5%	3%
5-10 Years	96%	1%	3%	0%
10 or More Years	97%	0%	2%	1%
Unknown Years	96%	2%	2%	0%
Item 22 Total	**86%**	**1%**	**12%**	**1%**
0-5 Years	77%	4%	16%	3%
5-10 Years	88%	0%	12%	0%
10 or More Years	88%	1%	10%	1%
Unknown Years	85%	4%	9%	2%
Item 23 Total	**93%**	**2%**	**3%**	**2%**
0-5 Years	85%	6%	5%	4%
5-10 Years	96%	1%	3%	0%
10 or More Years	95%	1%	2%	2%
Unknown Years	92%	4%	2%	2%
Item 24 Total	**95%**	**1%**	**3%**	**1%**
0-5 Years	94%	1%	2%	3%
5-10 Years	96%	1%	2%	1%
10 or More Years	94%	2%	3%	1%
Unknown Years	96%	2%	2%	0%

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 25 Total	**93%**	**1%**	**3%**	**3%**
0-5 Years	92%	3%	4%	1%
5-10 Years	94%	1%	3%	2%
10 or More Years	93%	0%	3%	4%
Unknown Years	92%	2%	4%	2%
Item 26 Total	**91%**	**1%**	**7%**	**1%**
0-5 Years	89%	1%	9%	1%
5-10 Years	95%	1%	3%	1%
10 or More Years	91%	0%	7%	2%
Unknown Years	85%	2%	13%	0%
Item 27 Total	**95%**	**1%**	**2%**	**2%**
0-5 Years	98%	1%	0%	1%
5-10 Years	97%	1%	1%	1%
10 or More Years	95%	0%	3%	2%
Unknown Years	92%	2%	6%	0%
Item 28 Total	**96%**	**1%**	**2%**	**1%**
0-5 Years	95%	1%	3%	1%
5-10 Years	99%	1%	0%	0%
10 or More Years	97%	0%	2%	1%
Unknown Years	91%	2%	7%	0%
Item 29 Total	**96%**	**1%**	**2%**	**1%**
0-5 Years	96%	1%	2%	1%
5-10 Years	96%	1%	2%	1%
10 or More Years	97%	0%	2%	1%
Unknown Years	91%	2%	7%	0%
Item 30 Total	**97%**	**1%**	**1%**	**1%**
0-5 Years	96%	2%	2%	0%
5-10 Years	97%	1%	1%	1%
10 or More Years	97%	0%	1%	2%
Unknown Years	98%	2%	0%	0%
Item 31 Total	**91%**	**2%**	**5%**	**2%**
0-5 Years	87%	3%	6%	4%
5-10 Years	94%	2%	4%	0%
10 or More Years	92%	1%	5%	2%
Unknown Years	87%	4%	9%	0%
Item 32 Total	**95%**	**1%**	**3%**	**1%**
0-5 Years	93%	2%	4%	1%
5-10 Years	97%	3%	0%	0%
10 or More Years	95%	1%	4%	0%
Unknown Years	92%	4%	2%	2%

	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Disagree or Agree	Not Applicable or No Response
Item 33 Total	**87%**	**6%**	**6%**	**1%**
0-5 Years	89%	6%	4%	1%
5-10 Years	91%	5%	4%	0%
10 or More Years	85%	6%	7%	2%
Unknown Years	90%	4%	6%	0%
Item 34 Total	**88%**	**2%**	**8%**	**2%**
0-5 Years	86%	5%	8%	1%
5-10 Years	90%	2%	7%	1%
10 or More Years	88%	1%	8%	3%
Unknown Years	87%	4%	9%	0%
Item 35 Total	**92%**	**1%**	**5%**	**2%**
0-5 Years	86%	1%	6%	7%
5-10 Years	92%	1%	7%	0%
10 or More Years	92%	1%	5%	2%
Unknown Years	94%	2%	4%	0%
Item 36 Total	**96%**	**1%**	**2%**	**1%**
0-5 Years	96%	1%	2%	1%
5-10 Years	95%	1%	3%	1%
10 or More Years	96%	0%	2%	2%
Unknown Years	96%	4%	0%	0%
Item 37 Total	**91%**	**3%**	**3%**	**3%**
0-5 Years	5%	2%	89%	4%
5-10 Years	92%	4%	3%	1%
10 or More Years	91%	3%	3%	3%
Unknown Years	92%	4%	2%	2%
Item 38 Total	**95%**	**1%**	**2%**	**2%**
0-5 Years	91%	2%	4%	3%
5-10 Years	97%	0%	3%	0%
10 or More Years	96%	1%	1%	2%
Unknown Years	90%	4%	0%	6%

- Comments about specific competencies
- General comments

SUMMARY OF COMMENTS FROM STATEWIDE VTEP SURVEYS

Returned surveys were examined for comments about individual competency statements and general comments about the overall survey. Comments focusing solely on inputs and processes such as requirements for additional funds for teacher education, materials (outdated textbooks, shop supplies), better pay, hiring teacher aides, and use of specific teaching pedagogies were omitted.

Comments are organized in numerical order by competency. When similar concerns were indicated by more than one respondent, the number of people expressing the identified concern is included in parenthesis at the end of the comment. If no comments were made about a specific competency, the competency is not included in the following list. General comments are included at the end of this summary.

COMMENTS ABOUT SPECIFIC COMPETENCIES

VTEP COMPETENCY Planning & Development (#1-22)	COMMENTS
1. Establish and maintain an occupational advisory committee for the purposes of obtaining vocational education direction, guidance, and requirements for learner performance. 2. Develop and implement a valid occupational survey, obtain and analyze the results, and develop curriculum, course and learner performance recommendations for vocational programs. 3. Develop, promote, implement and evaluate a school-community relation program for vocational education which will result in maintaining and possibly increasing the number of learners enrolled, completed, and placed. 4. Evaluate the effectiveness of offered vocational programs, based on required job competencies. 5. Identify gaps/discrepancies between community requirements and the performance objectives of current vocational offerings. 6. Write results oriented goals and objectives to close any gaps/discrepancies between occupational requirements and the performance objectives of vocational offerings.	1-6. Due to current teaching loads, lack of resources, and teaching responsibilities, these competencies cannot be done by teachers alone! A qualified teacher does not have be able to do a needs assessment. Although teachers should have an understanding of these processes, an administrator such as a curriculum specialist, occupational specialist or a district vocational extension specialist should have the major responsibility for these roles. However, teachers should or could assist in these steps in some capacity, but not to implement, conduct or do any major analysis. In addition, many of these competencies (1-6) would depend on the size of the district. Small districts may be able to handle these with a teacher doing a needs assessment, but large districts couldn't. Moreover, if assessments are to be done on a local level, a state-wide level should be accomplished as well. Many of these competency statements should be broken down into two parts (Reflects comments from 15 surveys). 4. Does this mean as a prerequisite for a program review?

VTEP COMPETENCY **Planning & Development (#1-22)**	COMMENTS
7. Identify students requiring special services and or learning experiences e.g. students who are learning disabled, have behavior disorders, are emotional impaired, or experience cultural barriers. 8. Prescribe the appropriate sources for students to receive special services and or learning experiences and assure that they are successfully delivered. 9. Develop and validate competency-based instructional materials for "special needs" student, in a vocational offering.	7-9. Special needs students should have already been identified before entering a program by a professional in that field. Prescribing sources of help may not be as appropriate as referring or recommending students for services. A vocational teacher does not have the training to prescribe lessons or develop lesson plans for special students. Guidance counselors or teachers trained for special needs should be used to do this task. Moreover, vocational teachers cannot always assure successful delivery of special materials for this population. In current situations, with typical classrooms of 30, little quality time is available to teach regular students, much less special needs students (Reflects comments from 49 surveys). 9. If a voc-ed program were properly developed using competency based materials, then it should be suitable for nearly every one except severely impaired students. In this case, materials should be developed jointly by regular Voc-Ed teachers & DES specialists.
10. Plan and implement learning experiences which eliminate potential negative learner impact from cultural differences, gender and equity biases.	10. Impossible to do under current system. (Reflects comments from 3 surveys). 10.We should treat students in a caring sensitive way. But lets not forget that these students are going out into a very imperfect world of work and they have to know that the world expects them to conform to it and work within the system, like it or not. Their education, at our hands, must reflect this reality.
13. Develop a unit of instruction, including lesson plans, to close any gaps/discrepancies between the learners skills, knowledges, abilities and attitudes and those required for mastery of job competencies of a specific vocational offering.	13. Formal lesson plans should not be required at the Junior College level.
16. Organize and supervise vocational student organization(s) in a school setting so they will meet their objectives.	16. May not be valid in teaching adults. Moreover, depends on institutions clients. (Reflects comments from 2 surveys.) 16. It is not a necessary conclusion that "meeting objectives" is conditional upon a teacher organizing and so pursuing these groups.

VTEP COMPETENCY **Planning & Development (#1-22)**	COMMENTS
17. Plan, implement and evaluate instruction for adult learners based on required competencies for the vocational offering.	17. May only be valid if teaching adults.
18. Select and use educational media/technologies to present a lesson or unit of instruction which will result in meeting course objectives.	18. Only if it is necessary to use instructional technologies. Many times these technologies are used as busy work for students or just for the sake of it being there. This takes away from the personal contact that so many students of today have to have. (Reflects comments from 2 surveys).
19. Identify and obtain or develop remedial instructional materials which assist learners to successfully achieve required performance objectives for a unit of instruction for a specific vocational offering.	19. This should be developed with teacher aides or support personnel team. Under current real class situations, it is almost impossible to remediate students. Usually no remediation takes place -- students have to repeat the block of instruction.
20. Identify and integrate, into a vocational offering, related academic skills and knowledge based on required job and social competencies. 21. Plan and implement instruction which successfully develops critical thinking and problem-solving skills of learners. 22. Define and use the vision, philosophy, mission and objectives of vocational education as the basis for making professional decisions.	20-22. What are "social competencies" (#20)? The phrase "making professional decisions" (#22) is unclear. This statement seems ambiguous and assumes that everyone agrees with whatever is supposed to be in the vision and philosophy. (Reflects comments from 2 surveys). 20. Student should know before hand what is expected of them as far as the SKAA's before entering an occupation. Guidance counselors can assist and work closely with students to help determine occupational programs beginning in the 8th-9th grades by offering a course such as a vocational career preparation and have filmstrips, pamphlets, and guidelines as far as course requirements. (Reflects comments from 2 surveys). 22. This is ambiguous. Presumes that everyone agrees with whatever is supposed to be the vision and philosophy.
VTEP COMPETENCY **Implementation & Management (#23-31)**	COMMENTS
23. Implement instructional strategies and tactics to motivate students which will improve reading, writing, mathematics, oral communication, and personal development skills appropriate for job and social competencies of a vocational offering.	23. This competency in itself is a full-time job. When do we teach the occupational skills after doing all this? This is too wordy. Break it down into several components.

VTEP COMPETENCY **Implementation & Management (#23-31)**	COMMENTS
24. Identify, organize, schedule, obtain and allocate classroom, laboratory and shop instructional resources on the basis of student performance objectives and the job competencies of a vocational offering.	24. Teachers do not generally allocate or schedule classrooms or obtain them. (Reflects comments from 2 surveys).
26. Implement group dynamic strategies that develop learner skills required to work cooperatively and collaboratively with other to achieve specific objectives.	26. This competency should not only be accomplished with students but also with other teachers and faculty. (Reflects comments from 2 surveys).
27. Develop and reinforce positive attitudes towards mutual respect in student/student and student/teacher relationships so that learners' performance will meet or exceed course/program objectives. 28. Develop and reinforce positive attitudes towards learning as a continual process and an individual responsibility so that learners performance will meet or exceed course/program objectives.	27 - 28. These competencies should be in the professional development category.
31. Identify, plan, manage and report requirements for and utilization of instructional resources based on required job competencies and learner performance objectives.	31. What does this mean?
VTEP COMPETENCY **Evaluation (#32-35)**	COMMENTS
33. Evaluate students day to day progress based on the prescribed unit or lesson objectives, in a vocational offering, using properly written criterion referenced examination(s), essay(s), and performance check sheets representative of a job/task or product, and identify areas for further competency development.	33. This competency is totally unrealistic and unfeasible for a day to day evaluation. We barely have enough time to teach and evaluate the basics. A weekly evaluation would be more justified. (Reflects comments from 6 surveys).
35. Analyze and interpret student performance measures on the basis of required job competencies for the vocational offering and use the data for feedback to learners for successful course delivery modification.	35. This should also be done state-wide.

VTEP COMPETENCY **Professional Advancement (#36-38)**	COMMENTS
36. Keep up-to-date professionally through state, local and national vocational organizations, short courses, seminars, personal readings, observations and advanced degrees, which will maintain and improve teacher effectiveness and efficiency.	36. Vocational teachers can become out of touch very quickly with rapid changes in technology today. Paid sabbaticals, coordinated by district administration, business & industry should be available for teachers to do free, mandatory in-field inservice. More hands on experience should be available. Teachers should know rules and regulations in their field since some can change in 6 months. It's hard for teachers in rural districts to drive long distances for certification classes. Technologies should be used to eliminate these problems. (Reflects comments from 22 surveys)
37. Teachers will conduct themselves and participate in a life style perceived by peers and community to be ethical and professional.	37. In this competency "and participate in a life-style perceived by peers and community" should be stricken. This infringes upon the personal life of the instructor which is private, can reflect biases, and is not very relevant for a qualified vocational teacher. Moreover, vocational education has a real image problem. Teachers and administration should work together to rid themselves of the old stereotypical vocational teacher image and push ahead to what vocational education is all about. (Reflects comments from 10 surveys)
38. Identify the linkages between one's vocational area and those of general and higher education, so that vocational learners will a) get and keep jobs in their job areas, b) identify additional and future job requirements and c) continue to be contributing employees and citizens.	38. There should also be district plans to strengthen ties with business and industry.

GENERAL COMMENTS

1. There are too many competencies here, as well as being very wordy, confusing and unrealistic. These seemed to be phrased for academics. In a realistic day-to-day classroom setting, with today's current restrictions on our budgets, time, and other resources, a teacher could not do all these... even those with advanced degrees. Students should take courses that promote strong academic backgrounds (applied physics & chemistry) and teachers should have strong up-to-date industrial experiences, good PR skills and good teaching pedagogies. With all of the competencies listed, if a teacher was to do these, there would be too much paperwork, and we would lose sight of what our job is (to teach) and our students instead of being flooded with so much busywork instead of learning the basics. (Reflects comments from 13 surveys)

2. Overall, a very good survey covering all the bases. (Reflects comments from 7 surveys)

3. The greatest need is cooperative/collaborative dialogues between high schools, community colleges, universities and vocational centers. A student completing a high school voc-ed program should be able to get credit from the work they did in high school and continue on with advanced work at the community college, voc-centers and or universities, instead of having to meet the same performance standards again and again.

4. Qualified vocational teachers should possess:
   - -- up to date understandings and practices of various learning philosophies and their techniques
   - -- knowledge of various evaluation techniques
   - -- complete up-to-date shop, classroom, laboratory, clinic management techniques
   - -- skills and knowledges to develop goals unique to the program
   - -- proper access and control over materials and budget resources
   - -- abilities to develop sound syllabi, handouts, worksheets, objectives, tests, and lab, shop, classroom and clinic activities.

5. These competencies may not be valid in some areas. Careful considerations must be made as to developing a generic set of competencies. For example, in middle school voc-ed, one main goal is to orient students into vocational education. Competencies # 1-6 would not be appropriate for this case. Consequently, according to the competency statements, one would not be a qualified vocational teacher. Moreover, there are other examples of this, such as teaching adults, etc.

6. Where are competencies that deal with discipline problems in the class? (Reflects comments from 2 surveys)

7. Industry knows what they are looking for, but they must tell us and we must listen.

For industry to "buy" our products (the students) they must have direct input on how we assemble and build our products. We should develop much stronger and closer ties with business and industry. (Reflects comments from 5 surveys)

8. Administration is already too top heavy. We should do our jobs in teaching students to be prepared for the real world and administration should help us in working closer with business and industry and coordinating up-grade training with them (business). (Reflects comments from 4 surveys)

9. Has DOE considered using a Deming approach for Quality Teaching? (Reflects comments from 2 surveys)

10. Are college faculty prepared to teach these competencies? What are the implications for these competencies state-wide?

11. How are these competencies going to be continually updated?

12. There seems to be a lot of duplication.

13.It seems the wheel is being reinvented. These competencies are about the same as the ones that were done in the 70s.

14. There is nothing in these competencies about improving teacher knowledge of new technology and developing in-field skills. Too much time is spent in theory and too little in practical preparation for managing a classroom of 30 students.

15. All 22 items under the Planning and Supervision category are currently part of our vo-tech programs.

16. All teachers should demonstrate the Florida Essential Generic competencies. Some of these may be encompassed, but not all have been addressed.

17. How can any vocational teacher "disagree" with any one of these statements? These are what the "ideal" vocational teacher should be able to do. However, in "reality" due to many constraints and restraints, it is not always possible to live up to all of these statements.

18. Compared to DACUM, VTEP seems to lack areas of communication, institutional service and financial responsibility.

Appendix H
VTEP/Blueprint/SCANS Comparisons

H2

SCANS Competencies

1. Resources: Identifies, organizes, plans and allocates resources

   Time: Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules

   Money: Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives

   Materials and Facilities: Acquires, stores allocates and uses materials or space efficiently

   Human Resources: Assesses skills and distributes work accordingly, evaluates performance and provides feedback

BLUEPRINT-RELATED Competencies

Grades K-5

- w Demonstrate an understanding of the historical role of technology in society and its importance in meeting human needs and wants.
- w Explore how people create, use and control technology.
- w Identify the resources and unique qualities of technological systems and subsystems: humans, information, materials, tools and machines, energy, capital and time.
- w Exhibit confidence and competence in the appropriate use of tools, materials and technological concepts.

Grades 6-8

- w Demonstrate proper and safe procedure while working with technological tools, apparatus, equipment, systems, and materials.
- w Utilize tools, machines and equipment in the technology laboratory.

Grades 9-12

- w Demonstrate proper and safe procedure while working with technological tools, apparatus, equipment, systems, and materials.

VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)

11. Determine the skills, knowledges, abilities and attitudes required for a student to successfully complete a vocational offering.

14. Prepare and or select instructional materials to achieve measurable results-based student performance objectives required for a course or unit of vocational instruction.

16. Organize and supervise vocational student organization(s) in a school setting so they will meet their objectives.

18. Select and use educational media/technologies to present a lesson or unit of instruction which will result in meeting course objectives.

19. Identify and obtain or develop remedial instructional materials which assist learners to successfully achieve required performance objectives for a unit of instruction for a specific vocational offering.

24. Identify, organize, schedule, obtain and allocate classroom, lab and shop instructional resources on the basis of student performance objectives and the job competencies of a vocational offering.

25. Demonstrate first-aid and safety procedures in vocational classroom, shop and laboratory settings which meet established workplace standards.

31. Identify, plan, manage and report requirements for and utilization of instructional resources based on required job competencies and learner performance objectives.

H 3

SCANS Competencies

2. Interpersonal: Works with others

   Participates as Member of a Team: contributes to group effort

   Teaches others new skills

   Serves Clients/Customers: works to satisfy customers' expectations

   Exercises Leadership: communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies

   Negotiates: works toward agreements involving exchange of resources, resolves divergent interests

   Works with Diversity: works well with men and women from diverse backgrounds

BLUEPRINT-RELATED Competencies

Grades K-5

- w Demonstrate an awareness of the relationship between educational achievement, technology, self-knowledge and career opportunities.
- w Develop skills for interacting with each other.

Grades 6-8

- w Exhibit positive human relations and leadership skills.
- w Practice skills for interacting with others.

Grades 9-12

- w Exhibit positive human relations and leadership skills in cooperative groups.
- w Use interpersonal and social skills required for positive interaction with others.

VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)

1. Establish and maintain an occupational advisory committee for the purposes of obtaining vocational education direction, guidance, and requirements for learner performance.

3. Develop, promote, implement and evaluate a school-community relations program for vocational education which will result in maintaining and possible increasing the number of learners enrolled, completed and placed.

10. Plan and implement learning experiences which eliminate potential negative learner impact from cultural differences, gender and equity biases.

15. Implement instructional strategies and tactics which eliminate negative impact on learning due to individual learner differences as to motivation level and learning potential.

21. Plan and implement instruction which successfully develops critical thinking and problem solving skills for learners.

23. Implement instructional strategies and tactics to motivate students which will improve reading, writing, mathematics, oral communication and personal development skills appropriate for job and social competencies for a vocational offering.

26. Implement group dynamic strategies that develop learner skills required to work cooperatively and collaboratively with other to achieve specific objectives.

SCANS Competencies	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
2. Interpersonal: (Continued)		27. Develop and reinforce positive attitudes toward learning as a continual process and an individual responsibility so that learners performance will meet or exceed course/program objectives. 29. Implement learning strategies which develop positive self esteem in learners which will result in their identifying and setting personal and vocational career goals(s). 37. Teachers will conduct themselves and participate in a life-style perceived by peers and community to be ethical and professional.

SCANS Competencies	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
3. <u>Information:</u> Acquires and uses information Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information	**Grades K-5** w Demonstrate skills in understanding and using technological information. w Acquire skills for understanding and using career information. **Grades 6-8** w Demonstrate computer application and literacy. w Demonstrate technological literacy. w Locate, understand and use career information. w Identify types and levels of work performed across a broad range of occupations. w Identify career opportunities in the fields of technology. **Grades 9-12** w Demonstrate computer application and literacy. w Use skills for locating, evaluating, and interpreting information about career opportunities. w Use skills for preparing, locating, obtaining, maintaining and advancing in a job.	1. Establish and maintain an occupational advisory committee for the purposes of obtaining vocational education direction, guidance, and requirements for learner performance. 2. Develop and implement a valid occupational survey, obtain and analyze the results, and develop curriculum, course and learner performance recommendations for vocational programs. 3. Develop, promote, implement and evaluate a school-community relations program for vocational education which will result in maintaining and possible increasing the number of learners enrolled, completed and placed. 4. Evaluate the effectiveness of offered vocational programs, based on required job competencies. 11. Determine the skills, knowledges, abilities and attitudes required for students to successfully complete a vocational offering. 20. Identify and integrate, into a vocational offering, related academic skills and knowledge based on required job and social competencies. 22. Define and use the vision, philosophy, mission and objectives of vocational education as the basis for making professional decisions.

H5

SCANS Competencies	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
3. Information: (continued)		33. Evaluates students day to day progress based on the prescribed unit or lesson objectives, in a vocational offering, using properly written criterion referenced examinations(s), essay(s), and performance check sheets representative of a job/task or product, and identify areas for further competency development.
		35. Analyze and interpret student performance measures on the basis of required job competencies for the vocational offering and use the data for feedback to learners for successful course delivery modification.
		36. Keep up-to-date professionally through state, local and national vocational organizations, short courses, seminars, personal readings, observations and advanced degrees, which will maintain and improve teacher effectiveness and efficiency.

SCANS Competencies	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
4. Systems: Understands complex inter-relationships Understands Systems: knows how social, organizational and technological systems work and operates effectively with them Monitors and Corrects Performance: distinguishes trends, predicts impacts on system operations, diagnoses deviations in systems' performance and corrects malfunctions Improves or Designs Systems: suggests modifications to existing systems and develops new or alternative systems to improve performance Uses Computers to Process Information	**Grades K-5** w Develop awareness of the importance of education achievement to career opportunities. w Develop awareness of interrelationship of life roles, life styles and careers. w Demonstrate awareness of current systems of technology as they relate to the biological, informational and physical sciences. w Demonstrate knowledge of the essential elements and organization of the free enterprise systems. **Grades 6-8** w Utilize the systems approach in technology. w Demonstrate a knowledge of the interrelationships of roles, life styles and careers. w Demonstrate knowledge of relationship of educational achievement to career opportunities. w Understand the value of personal responsibility, good work habits and planning for career opportunities. w Relate careers to the needs and functions of the economy and society. w Relate educational achievement to career opportunity. w Understand the attitudes necessary for success in work and learning. **Grades 9-12** w Perform special skills unique to electronics, computers and the technology systems of communications, manufacturing, construction, energy, power, and transportation.	5. Identify gaps/discrepancies between community requirements and the performance objectives of current vocational offerings. 6. Write results oriented goals and objectives to close any gaps/discrepancies between occupational requirements and the performance objectives of vocational offerings. 9. Develop and validate competency-based instructional materials for "special needs" students in a vocational offering. 12. Write, review and sequence measurable results-based student performance standards to close any gaps/discrepancies between the learners skills, knowledges, abilities and attitudes and those required to become productive workers and citizens in a specific occupation. 13. Develop a unit of instruction, including lesson plans, to close any gaps/discrepancies between the learners skills, knowledges, abilities and attitudes and those required for mastery of job competencies of a specific vocational offering. 17. Plan, implement and evaluate instruction for adult learners based on required competencies for the vocational offering. 19. Identify and obtain or develop remedial instructional materials which assist learners to successfully achieve required performance objectives for a unit of instruction for a specific vocational offering.

H 7

SCANS Competencies	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
4. Systems: Understands complex inter-relationships (continued)	**Grades 9-12** (continued) w Demonstrate knowledge of the basic principles of technology, the basic elements of all systems, and the components of each basic element. w Demonstrate the use of computer to integrate and control a system composed of mechanical, fluid, and electrical systems. w Demonstrate an understanding of how societal needs and functions influence the nature and structure of work.	20. Identify and integrate, into a vocational offering, related academic skills and knowledge based on required job and social competencies. 30. Relate classroom, shop and laboratory instruction to the responsibilities of becoming a self sufficient, self reliant, productive member of a community and society. 32. Select and obtain or develop appropriate testing instruments to measure student's achievement based on the stated goals and student performance objectives for a course and unit of instruction for a vocational offering. 33. Evaluate students day to day progress based on the prescribed unit or lesson objectives, in a vocational offering, using properly written criterion referenced examinations(s), essay(s), and performance check sheets representative of a job/task or product, and identify areas for further competency development. 34. Devise self-evaluation techniques for students which accurately measure their level of achievement of performance objectives based on required job competencies for the vocational offering. 35. Analyze and interpret student performance measures on the basis of required job competencies for the vocational offering and use the data for feedback to learners for successful course delivery modification.

SCANS Competencies	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
4. Systems: Understands complex inter-relationships (continued)		38. Identify the linkages between one's vocational area and those of general and higher education, so that vocational learners will a) get and keep jobs in their job areas, b) identify additional and future job requirements, and c) continue to be contributing employees and citizens.

SCANS Competencies

5. Technology: Works with a variety of technologies.

   Selects Technology: chooses procedures, tools or equipment including computers and related technologies.

   Applies Technology to Task: understands overall intent and proper procedures for setup and operation of equipment

   Maintains and Troubleshoots Equipment: prevents, identifies or solves problems with equipment, including computers and other technologies

BLUEPRINT-RELATED Competencies

Grades K-5

- w Demonstrate technological vocabulary and display a working knowledge of technological terms
- w Understand the dynamics of technology including its development, impact, consequences and potential to solve human problems, and extend human capabilities.
- w Employ the process of technological problem solving, creating and designing skills, through working safely with tools, materials and technological concepts and processes.
- w Apply scientific principles, engineering concepts and technological systems in the invention of technology.
- w Identify current forms of technologies associated with various career fields.

Grades 6-8

- w Develop the idea that technology is the application of knowledge to solve human problems and extend capabilities.
- w Describe positive and negative impacts of technology.
- w Identify resources of technology.

Grades 9-12

- w Identify evolving technologies in our technological world.
- w Demonstrate technological literacy.
- w Solve business/industry-related and life problems using technological tools, materials, processes, and products.

VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)

9. Develop and validate competency-based instructional materials for "special needs" students, in a vocational offering.

14. Prepare and or select instructional materials to achieve measurable results-based student performance objectives required for a course or unit of vocational instruction.

18. Select and use educational media/technologies to present a lesson or unit of instruction which will result in meeting course objectives.

19. Identify and obtain or develop remedial instructional materials which assist learners to successfully achieve required performance objectives for a unit of instruction for a specific vocational offering.

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SCANS THREE PART FOUNDATION	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
1. Basic Skills: Reads, writes, performs arithmetic and mathematical operations, listens and speaks. Reading: locates, understands, and interprets written information in prose and in documents such as manuals, graphs and schedules Writing: communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts. Arithmetic/Mathematics: performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques. Listening: receives, attends to, interprets, and responds to verbal messages and other cues. Speaking: organizes ideas and communicates orally.	**Grades K-5** w Demonstrate awareness of application of basic academic skills to technological information. w Use career concepts to reinforce need and use of basic skills. **Grades 6-8** w Apply basic skills in communications, mathematics and science appropriate to technological content and learning activities. w Apply basic skills to real world problems of personal budget, career development, economics education, government, and other local issues. w Apply basic skills to real world problems of personal budget, career development, economics education, government, and other local issues.. **Grades 9-12** w Apply basic skills in communications, mathematics, and science appropriate to technological content and learning activities. w Practice the practical application of the basic skills to real and imagined scenarios using high level math, science, and communication competencies. w Use a variety of academic and vocational skills in an integrated manner to complete a real world project or learning activity..	6. Write results oriented goals and objectives to close any gaps/discrepancies between occupational requirements and the performance objectives of vocational offerings. 12. Write, review and sequence measurable results-based student performance standards to close any gaps/discrepancies between the learners skills, knowledges, abilities and attitudes and those required to become productive workers and citizens in a specific occupation. 31. Identify, plan, manage and report requirements for and utilization of instructional resources based on required job competencies and learner performance objectives. 36. Keep up-to-date professionally through state, local and national vocational organizations, short courses, seminars, personal readings, observations and advanced degrees, which will maintain and improve teacher effectiveness and efficiency.

SCANS THREE PART FOUNDATION	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
2. Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons. Creative Thinking: generates new ideas Decision Making: specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternatives Problem Solving: recognizes problems and devises and implements plan of action. Seeing Things in the Mind's Eye: organizes, and processes symbols, pictures, graphs, objects and other information. Knowing How to Learn: uses efficient learning techniques to acquire and apply new knowledge and skills. Reasoning: discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem.	**Grades K-5** w Develop an understanding of how to make decisions and choose alternatives related to tentative educational and career goals. w Demonstrate an awareness that learning is a lifelong process. w Develop awareness of the importance of emotional and physical development in career decision making.. w Develop awareness of the relationship of work and learning. **Grades 6-8** w Demonstrate and apply design/problem-solving processes.. w Develop and use skills for coping with physical and emotional conditions that can impact decisions. w Understand the importance of emotional and physical development required for proactive career decision making. w Demonstrate knowledge of skills necessary to obtain and maintain a job. w Understand the skills needed in making decisions and choosing alternatives in planning for and pursuing tentative educational and career goals.. w Understand the process of career exploration and planning. w Understand the process of career exploration and planning. w Assess personal attitudes, interests and abilities relative to career clusters.	2. Develop and implement a valid occupational survey, obtain and analyze the results, and develop curriculum, course and learner performance recommendations for vocational programs. 3. Develop, promote, implement and evaluate a school-community relations program for vocational education which will result in maintaining and possible increasing the number of learners enrolled, completed and placed. 4. Evaluate the effectiveness of offered vocational programs, based on required job competencies. 5. Identify gaps/discrepancies between community requirements and the performance objectives of current vocational offerings. 6. Write results oriented goals and objectives to close any gaps/discrepancies between occupational requirements and the performance objectives of vocational offerings. 7. Identify students requiring special services and or learning experiences, e.g. students who are learning disabled, have behavior disorders, are emotionally impaired, or experience cultural barriers. 8. Prescribe the appropriate sources for students to receive special services and or learning experiences and assure that they are successfully delivered. 9. Develop and validate competency-based instructional materials for "special needs" students in a vocational offering.

SCANS THREE PART FOUNDATION	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
2. Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons (continued)	Grades 9-12 w Demonstrate and apply design/problem solving process across various subject areas. w Research, plan design, construct and evaluate problems and projects common to technological or social scenarios. w Demonstrate an understanding of the interrelationship of emotional and physical development and career decision making. w Use skills in making decisions and choosing alternatives in planning for and pursuing educational and career goals. w Use skills in career exploration and planning. w Demonstrate an understanding of the interrelationship between educational achievement and career planning, training and placement.	10. Plan and implement learning experiences which eliminate potential negative learner impact from cultural differences, gender and equity biases. 11. Determine the skills, knowledges, abilities and attitudes required for a student to successfully complete a vocational offering. 12. Write, review and sequence measurable results-based student performance standards to close any gaps/discrepancies between the learners skills, knowledges, abilities and attitudes and those required to become productive workers and citizens in a specific occupation. 13. Develop a unit of instruction, including lesson plans, to close any gaps/discrepancies between the learners skills, knowledges, abilities and attitudes and those required for mastery of job competencies of a specific vocational offering. 14. Prepare and or select instructional materials to achieve measurable results-based student performance objectives required for a course or unit of vocational instruction. 15. Implement instructional strategies and tactics which eliminate negative impact on learning due to individual learner differences as to motivation level and learning potential. 16. Organize and supervise vocational student organization(s) in a school setting so they will meet their objectives.

SCANS THREE PART FOUNDATION	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
2. Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons (continued)		17. Plan, implement and evaluate instruction for adult learners based on required competencies for the vocational offering. 18. Select and use educational media/technologies to present a lesson or unit of instruction which will result in meeting course objectives. 19. Identify and obtain or develop remedial instructional materials which assist learners to successfully achieve required performance objectives for a unit of instruction for a specific vocational offering. 20. Identify and integrate, into a vocational offering, related academic skills and knowledge based on required job and social competencies. 21. Plan and implement instruction which successfully develops critical thinking and problem solving skills for learners. 22. Define and use the vision, philosophy, mission and objectives of vocational education as the basis for making professional decisions. 23. Implement instructional strategies and tactics to motivate students which will improve reading, writing, mathematics, oral communication and personal development skills appropriate for job and social competencies for a vocational offering. 24. Identify, organize, schedule, obtain and allocate classroom, lab and shop instructional resources on the basis of student performance objectives and the job competencies of a vocational offering.

SCANS THREE PART FOUNDATION	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
2. Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons (continued)		29. Implement learning strategies which develop positive self esteem in learners which will result in their identifying and setting personal and vocational career goals(s). 30. Relate classroom, shop and laboratory instruction to the responsibilities of becoming a self sufficient, self reliant, productive member of a community and society. 31. Identify, plan, manage and report requirements for and utilization of instructional resources based on required job competencies and learner performance objectives. 32. Select and obtain or develop appropriate testing instruments to measure student's achievement based on the stated goals and student performance objectives for a course and unit of instruction for a vocational offering. 33. Evaluate students day to day progress based on the prescribed unit or lesson objectives, in a vocational offering, using properly written criterion referenced examinations(s), essay(s), and performance check sheets representative of a job/task or product, and identify areas for further competency development. 34. Devise self-evaluation techniques for students which accurately measure their level of achievement of performance objectives based on required job competencies for the vocational offering.

SCANS THREE PART FOUNDATION	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
2. Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons (continued)		35. Analyze and interpret student performance measures on the basis of required job competencies for the vocational offering and use the data for feedback to learners for successful course delivery modification. 36. Keep up-to-date professionally through state, local and national vocational organizations, short courses, seminars, personal readings, observations and advanced degrees, which will maintain and improve teacher effectiveness and efficiency. 38. Identify the linkages between one's vocational area and those of general and higher education, so that vocational learners will a) get and keep jobs in their job areas, b) identify additional and future job requirements, and c) continue to be contributing employees and citizens.

SCANS THREE PART FOUNDATION	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
3. Personal Qualities: Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.. Responsibility: exerts a high level of effort and perseveres towards goal attainment Self-esteem: believes in own self-worth and maintains a positive view of self Sociability: demonstrates understanding, friendliness, adaptability, empathy and politeness in group settings. Self-Management: assesses self accurately, sets personal goals, monitors progress, and exhibits self-control. Integrity/Honesty: chooses ethical courses of action.	Grades K-5 w Acquire knowledge of the importance of a positive self concept to career development w Develop awareness of the interrelationship of personal responsibility, good work habits and career opportunities. w Develop awareness of different occupations and changing male/female roles. w Demonstrate an awareness of the impact and consequences of technology to the needs and functions of society. w Demonstrate understanding of the relationship between technological decisions and human values w Discover and develop personal interests and abilities related to a wide variety of careers. w Demonstrate an awareness of the importance of technology as a change agent affecting career decision making. w Demonstrate awareness of the impact of both current and emerging technology on life roles, life styles and careers.. w Demonstrate an appreciation and understanding for the dignity and value of work. w Identify kinds and levels of work common to today's technological world.	3. Develop, promote, implement and evaluate a school-community relations program for vocational education which will result in maintaining and possible increasing the number of learners enrolled, completed, and placed. 7. Identify students requiring special services and or learning experiences, e.g. students who are learning disabled, have behavior disorders, are emotionally impaired or experience cultural barriers. 8. Prescribe the appropriate sources for students to receive special services and or learning experiences and assure that they are successfully delivered.26. Implement group dynamic strategies that develop learner skills required to work cooperatively and collaboratively with others to achieve specific objectives. 27. Develop and reinforce positive attitudes towards mutual respect in student/student and student/teacher relationships so that learners' performance will meet or exceed course/program objectives. 28. Develop and reinforce positive attitudes towards learning as a continual process and an individual responsibility so that learners performance will meet or exceed course/program objectives. 37. Teachers will conduct themselves and participate in a life-style perceived by peers and community to be ethical and professional.

SCANS THREE PART FOUNDATION	BLUEPRINT-RELATED Competencies	VTEP Competencies (To Be Acquired by Vocational Teacher Ed Students)
3. Personal Qualities: Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty. (continued)	**Grades 6-8** w Display an understanding and appreciation for the dignity and worth of honest labor. w Discuss individual interests and aptitudes as they relate to a career. w Develop and use a positive self concept for career development.. w Understand how sex role stereotyping, bias, and discrimination limit career choices, opportunity and achievement. **Grades 9-12** w Use positive attitudes toward work and learning. w Demonstrate an understanding of the continuous change in male/female roles and how they relate to career decisions. w Demonstrate an understanding of the interrelationship of life goals and careers. w Demonstrate an understanding of the influence of a positive self-concept on career development w Display an understanding and appreciation for the dignity and worth of honest labor.	

Appendix I
Vocational teacher education: A context for the future.
(Lynch & Griggs, 1989)

VOCATIONAL TEACHER EDUCATION: A CONTEXT FOR THE FUTURE

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EXECUTIVE SUMMARY

Significant policy changes affecting teacher education are no longer suppositions; they are fact. Some form of policy reform affecting the way in which elementary and secondary teachers are educated, tested, credentialed, certified, inducted, compensated, evaluated, and/or recertified has occurred in virtually every state. Little is known about the effects of such policy reforms upon vocational teacher education; in fact, not much is known about vocational teacher education at all.

This paper discusses the perceived effects of nationally-posited and state-mandated reforms in teacher education upon vocational teacher education and charts some future direction for vocational teacher education within this overall context of educational reform. The paper discusses the salient features of reform in teacher education as mandated by policy groups in at least forty-six states. Some of the philosophical underpinnings of vocational teacher education are presented, and their uniqueness within teacher preparation is discussed. The paper addresses issues in vocational teacher education with regard to reform in initial state certification requirements, teacher testing, and program or curriculum changes. Some data on teacher education and vocational teacher education is included. A proposed framework for determining the knowledge base of vocational teacher education and three alternative, testable models for its delivery are offered.

It is proposed that systematic, disciplined inquiry guide reform in vocational teacher education. Among the specific recommendations are the following: (1) establish a national commission to examine and study vocational teacher education within a context of education reform, (2) collect data on vocational teacher education, (3) validate the philosophy undergirding vocational teacher education, (4) determine more specifically the effects of mandated reforms on vocational teacher education, (5) determine the knowledge bases for vocational teacher education, and (6) experiment with varying models for delivering vocational teacher education.

ACKNOWLEDGEMENTS

This paper represents a synthesis of the writings and presentations of many people who have addressed the overall framework and specific elements identified with teacher education reform in general and vocational teacher education in particular. We acknowledge the contributions of the authors whose work is cited throughout the document, many of whom graciously provided additional thoughts and reflections in personal or telephone interviews.

Participants in two conferences on vocational teacher education were especially helpful in conceptualizing this paper: the Rupert N. Evans Symposium on Vocational Teacher Education and the Holmes Group-related discussions sponsored by the Department of Vocational and Technical Education at the University of Illinois-Champaign in May, 1988, and a conference on vocational teacher education sponsored by the Virginia Polytechnic Institute and State University and the University of Illinois-Champaign Offices of the National Center for Research in Vocational Education, University of California at Berkeley, in December, 1988.

We also acknowledge the work of colleagues who researched and drafted portions of this paper. We are especially grateful to Dr. James Burrow and Dr. Edgar Farmer from North Carolina State University who did much of the work on alternative delivery systems; to Mr. James Smith at Virginia Polytechnic Institute and State University who worked with the available databases; and to Dr. Alexander Cuthbert at Virginia Polytechnic Institute and State University who assisted with the planning of the contents of this paper and with the literature searches. These individuals also participated with us in conceptualizing and finalizing this paper.

INTRODUCTION

Significant policy changes affecting teacher education are no longer suppositions; they are fact. Some form of policy reform affecting the way in which elementary and secondary teachers in this country are educated, tested, credentialed, certified, inducted, compensated, evaluated, and/or recertified has occurred in virtually every state. A major underlying theme behind the mandated changes seems to be that an increase in quantifiable standards will result in a better teaching force which, in turn, will result in better public schools which will result in high school graduates better prepared for college as well as a myriad of adult roles and responsibilities. Some advocates of reform within education also suggest, congruently, that an increase in standards will result in a true professionalization of the teaching force.

The present or forthcoming changes in teacher education have not emerged from any one document, individual, policy group, or association. Nor are they necessarily grounded in scholarly, disciplined inquiry. Rather, the changes seem to have accumulated from a variety of influences—many appropriately categorized as political—including state policy boards; national commission or study-group reports (e.g., National Commission on Excellence in Teacher Education, Southern Regional Education Board, the Holmes Group, National Governors Association, and Carnegie Forum); dissatisfied products of teacher education and/or the public school system; public disclosure of dreadful teacher education programs, professors, and products; and public opinion as reflected in the media.

Although perhaps oversimplified, there seem to be eight general themes undergirding most of the proposals for change in the preparation of beginning teachers. The first seven of these themes form the foundation for major policy changes affecting teacher education in our nation's colleges and universities. The eight themes are as follows:

1. The preparation of teachers should be as intellectually demanding as the preparation of other professionals. Thus, various measures of intellectual capability, academic achievement, and performance potential should be used to control entry into teacher education and teaching so as to increase the quality of the teaching force.

2. Curricular redesign of teacher education should be modeled after those programs designed to prepare other professionals, particularly those which require rigorous pre- and postbaccalaureate preparation (e.g., law, medicine, and architecture).

3. Prospective teachers should have extensive preparation in the liberal arts and should have substantial coursework in the subjects they will teach. In several of the reform reports, this has meant that, operationally, all prospective teachers should major in an academic subject or professional discipline outside of education.

4. Professional education courses need a massive overhaul. Pedagogical preparation can be more effective and efficient, so the content of professional education courses must be based on current research and knowledge from pedagogical sciences and supporting disciplines.

5. Teacher education programs must include extensive clinical field experiences and other collaborative efforts with public schools. Teacher educators (including subject matter specialists) should supervise clinical experiences jointly with public school personnel. An extensive induction period (i.e., a fifth or even a sixth year clinically supervised program) should be a part of the curricular design.

6. Classroom teachers should be involved in advising and governing teacher education. It is teachers (through boards, advisory committees, and teacher organizations) who should influence and possibly direct efforts to improve standards for entry into teacher preparation, curriculum, licensing, testing, evaluation, and national certification.

7. Alternative programs should be developed to recruit, prepare, and certify qualified individuals who—for a multitude of reasons—have not completed or cannot participate in a conventional teacher education program.

8. Extensive efforts must be launched to recruit highly qualified and talented individuals into the teaching force. Moreover, systems must be established to help ensure their success in teacher education and in teaching. Special recruiting and retention efforts must be aimed toward ethnic and other minority groups that are currently underrepresented in the teaching force.

The actual and perceived manifestation of policies imbedded in some of these themes may pose unique challenges for vocational teacher education. Vocational educators have had little if any input into the discussion leading to the formation of policy recommendations and their resulting implementation. And, there is no indication in any of the reform

reports that the significance of vocational education for our nation's youth and adults in elementary, secondary, and postsecondary institutions or the nature of vocational teacher education itself were considered in the formulation of recommendations for the education of teachers. The redesign of vocational teacher education will be a concomitant result of the current emphasis on the reform of education in which vocational educators have been non-participants. While there have been strategies and models proposed and implemented for restructuring teacher education in general, little attention has been given to vocational teacher education.

It is thus the purpose of this paper to discuss the perceived effects of nationally posited and state-mandated reforms in teacher education upon vocational teacher education and to chart some future direction for vocational teacher education within this overall context of reform. Closely related, the paper attempts to bring the results of research, philosophical underpinnings, data, and recommendations relative to vocational teacher education to the attention of national and state education policymakers. Specifically, the paper first examines some of the basic beliefs that undergird practice in vocational teacher education. The intent of this section is to inform policymakers of the philosophy upon which practice in vocational teacher education has been developed and to highlight its distinguishing elements.

The policy recommendations which have seemingly been most troublesome for vocational teacher education can be classified into three major categories: (1) initial certification requirements, (2) teacher testing, and (3) state-mandated programmatic requirements. Each is examined and their perceived (or actual, where known) effects on vocational teacher education are discussed.

In several places, the literature implies that little is known about vocational teacher education. In fact, almost no data was available about teacher education in general until national databases were initiated about four years ago (Imig, 1987). The current data that is available about teacher education and some limited data on vocational teacher education is presented for perusal by policymakers whose decisions impact on vocational teacher education.

The actual content of vocational teacher education, that is, the pedagogy identified with vocational teacher education, needs constant and penetrating study to determine congruency with the knowledge base regarded as essential for the preparation of all teachers.

Thus, the framework for current research on the knowledge base for teaching and the implications for vocational teacher education are presented.

Considerable discussion is also warranted on the plural nature of delivery models for vocational teacher education. Several of the reports on the reform of teacher education imply that only one model is appropriate for the preparation of teachers, which is a professional studies component—generally a fifth year—building upon a baccalaureate degree in a subject identified with the arts and sciences. Such a singular model may be the least desirable for vocational teacher education. Three alternative models that seem to be appropriate for vocational education are presented and discussed.

In the final section of the paper, initial recommendations for vocational teacher education resulting from an examination of state policy reforms, discussion at vocational teacher education conferences, and extant literature are presented. It is hoped that these recommendations will be used as a basis for further research on and discussion of policy issues in vocational teacher education in the future.

PHILOSOPHY

The basic beliefs—the philosophy—undergirding vocational education and vocational teacher education regularly need to be examined to ensure that they remain viable in complex, dynamic educational and societal contexts. The literature is replete with debate on the role of vocational education within public education and historic, contemporary, and futuristically based postulates can be extracted for their use in philosophy studies. The basic beliefs should then serve as the foundation for further research, policy, and subsequent practice in vocational teacher education.

By beliefs, we include those concepts, ideas, and notions that are used to describe and fix in thought and language what vocational teacher education is and what it does. As with most disciplines, they emanate more from the perceived ideal, tested opinion, and common experience rather than solely from hard data or empirical research. Nevertheless, it is the philosophy or basic beliefs that undergird practice.

As a starting point for discussion about contemporary beliefs relative to vocational teacher education, we draw upon the report of an intensive three-year study conducted at Virginia Polytechnic Institute and State University. One outcome of this study was the delineation of ten beliefs that seem to undergird curriculum and practice in vocational teacher education. They are as follows:

1. Education for employability, broadly conceived and for the long term and as generally and specifically provided through vocational education, is in the purview of public education at secondary, postsecondary, and adult levels.

2. Pedagogy is important in the preparation of vocational education teachers.

3. The design for vocational teacher education programs must be intellectually well-grounded, including strong components in subject matter content, liberal studies, pedagogy, and clinical experiences.

4. Vocational teaching, and, thus, vocational teacher education, should be client specific, but relevant to the changing nature of work, changes in the workplace, new and emerging technology, and the needs of the employment community.

5. Learning to teach is a long term, developmental process.

6. Teaching and learning to teach should be done within a context of inquiry.

7. Vocational teacher education should be conducted in collaboration with public schools, community colleges, and vocational and technical schools.

8. The public schools, community colleges, and vocational and technical schools can accommodate instructors with varying levels of occupational and educational preparation and experiences. Professional recognition and remuneration should be based on demonstrated effectiveness in teaching students and managing activities related to the effective operation of a vocational education program; for example, sponsoring student organizations, administering adult vocational programs, managing instructional laboratories, and supervising business or industry internships.

9. Vocational education classrooms should be staffed with teachers from a broad array of clientele appropriate to the subject matter to be taught and congruent with the egalitarian goals of society.

10. There is no single "best" method or delivery system with which to initially prepare and credential a vocational education teacher. (Lynch, 1988b; Lynch, Finch, Laporte, & Stewart, 1987)

Some of the above tenets are indeed appropriate for all of teacher education and are philosophically grounded in beliefs about the way in which the preparation of all teachers should occur. A few, however, are unique to vocational education. For example, a central concept to vocational education is employability. The general versus specific goals and outcomes of vocational education are often debated in the professional literature—especially as relevant at the secondary level—but the twentieth century mission statements and related goals for public education have nearly always included an employability goal. From the early writings of Dewey and his discussion of a practical education and on to the contemporary purposes of schooling as discussed by Goodlad and others, it appears as though vocational education is well embedded in the mission of our nation's public schools: "Almost every skilled, technical, and professional occupation inducts at least part of its workers through formal school programs offered in high schools [and] community colleges . . ." (Evans & Herr, 1978, p. 11). And students do enroll in vocational courses. According to the National Assessment of Vocational Education (Wirt, Muraskin, Goodwin, & Meyer, 1989), enrollment in secondary vocational education is nearly universal: ninety-seven percent of the 1982 high school graduates enrolled in at least one vocational education course during grades nine through twelve. Transcript analysis showed that approximately twenty-one percent of their credits, 4.38 out of a total of 20.86, were earned from vocational education courses. The number of credits earned from vocational education courses declined somewhat for the class of 1987. This class earned an average of 22.84 credits, 4.21 of which were classified as vocational education (p. 52). It has further been estimated that approximately sixty percent of all community colleges and about eighty percent of all enrollments in publicly sponsored adult education programs can be described as vocational. The specific functions and the form of vocational education in the schools—that is, the breadth and the depth offered—may vary, but judging from the review of the historical and contemporary goals of public education and the continued interest in enrolling in vocationally oriented courses, it is assumed that the schools will continue to assume a major role in

preparing students for the world of work. Thus, in addition to establishing reform policy for the preparation of teachers in general, policymakers must be concerned with preparing vocational education teachers to enhance the employability of their students.

Closely related to the employability goal of vocational education and its unique impact on the preparation of teachers is that vocational teaching, and thus vocational teacher education, must not only be responsive to the learners' needs and characteristics, but must also be relevant to the changing nature of work, changes in the workplace, new and emerging technology, and the needs of the employment community. This belief speaks to the challenge of educating the learner—regardless of his or her academic, sociological, cultural, or economic situation—for meaningful employment acceptable within the infrastructure of the contemporary workplace. Vocational education serves widely diverse students. Teachers must be prepared to respond to this diversity with programs and services that enhance the employability of all students.

Another tenet of vocational teacher education that appears not to have been considered in the various education reform reports is the preparation of teachers for vocational schools, technical institutes, and community colleges. For each of these unique institutions, the establishment of clinical experiences for prospective teachers to integrate research with practice and to update the employability and pedagogical skills of inservice teachers and professors is essential to achieve the educational goals envisioned in the various reform efforts.

A final, perhaps unique, philosophical tenet of vocational teacher education is recognition of the need for and value of alternative delivery systems to prepare teachers of vocational education. Vocational education classrooms have historically and successfully been staffed by persons with substantive experience in business, industry, agriculture, the trades, and medicine. Alternative models to prepare, credential, evaluate, and license these teachers has long been a purview of vocational teacher education. The extant research and literature simply do not support a single, superior delivery model for vocational teacher education.

STATE EDUCATION REFORM POLICIES AND THEIR EFFECTS ON VOCATIONAL TEACHER EDUCATION

An unprecedented volume of state legislation and related policies affecting teacher education has occurred in the past five years. Some mandates have yet to be implemented; the details and operational procedures are still being debated. The report card assessing any significant change resulting from these reform initiatives has yet to be issued. Furthermore, there appears to be little data or substantive knowledge on the macro (i.e., national) effects of any teacher education reform efforts on vocational teacher education. The purpose of this section is to present and discuss contemporary policy in three major categories: initial certification requirements, including alternatives to certification; teacher testing; and state-mandated programmatic requirements in teacher education. Where appropriate, the perceived (and actual, if possible) effects on vocational teacher education are discussed.

Initial Certification Requirements

All states require that regularly employed teachers in the public schools hold certificates in accordance with the rules of certification prescribed by that state's governing board of education. This certification authority reflects the beliefs that the education of children and youth should be safeguarded by requirements governing qualifications of applicants who want to teach in the public schools and that licensure of teachers is indeed in the purview of the public good.

The requirements have historically been relatively minimal. Typically, state teacher certification regulations included a few general requirements (e.g., good health, sound mind, good personality, and United States citizenship); a college degree (but not always, depending usually on supply and demand factors); general education requirements (e.g., college preparation in the liberal arts and sciences); professional requirements (e.g., preparation in curriculum and methods courses, educational psychology, and philosophy of education); and subject specific requirements. Certification requirements were often nebulous enough to allow widely diverse interpretation by either the agency evaluating and issuing certificates and/or the colleges or universities authorized to prepare teachers. Miller (1982) pointed out that a sample of just a few states yielded the following types of certificates:

"Life, Permanent, Professional, Continuing, Regular, General, Provisional, Probationary, Temporary, Limited, Emergency, and (certainly the most ego-shattering), the Sub-Standard" (p. 27).

State certification regulations have historically been especially flexible for vocational teachers. Beginning with the 1917 Smith-Hughes Act and continuing to the present time, nearly all states allow a special category for certifying trade and industrial (T&I) or other vocational teacher applicants—usually substituting years of work experience in a trade, medical field, or business for academic preparation. In fact, only Hawaii and Wisconsin require a baccalaureate degree for initial certification as a T&I teacher. Only seven states require baccalaureate degree completion for full certification as a T&I teacher; an additional five states require an associate (i.e., two-year) degree for full certification (Duenk, 1989). Typically, some form of inservice education was and continues to be required for T&I and other nondegreed vocational teachers, usually in the form of state-mandated clock hours of curriculum and methods courses provided by the state department of education, a college or university, or the school system itself.

Major, significant changes in state-required teacher certification began occurring in the early 1980s. Various data sets and surveys indicate that virtually every state reformed its teacher certification policies. In nearly half of the states, reforms were mandated through state legislative action (over one thousand pieces); in others, the primary impetus for reform emanated from that state's board of education. In virtually all states, the certification changes came through the political process and never reflected a consensual view either within the profession or across the states of what a prospective teacher ought to know and be able to do (Darling-Hammond & Berry, 1988).

The following is a synthesis of the major changes in state certification requirements, since 1983, that have affected teacher education in general and probably have or will affect vocational teacher education in our nation's colleges and universities:

1. Documented evidence is available that forty-six states have mandated changes in teacher education commensurate with the rash of education reform movements published in the last decade (Darling-Hammond & Berry, 1988).

2. Twenty-six states require prospective teachers to pass a test in basic education skills, subject matter, and/or professional knowledge to gain certification

(Letherman, 1988). In 1985-86, twenty-three states required a basic skills competency test as a part of their requirements for certification of vocational teachers (Pratzner, 1988). Duenk (1989) reports that twenty-five states require some type of basic skills test for nondegreed teacher-applicants prior to their employment as vocational education teachers.

3. Twenty-six states mandated that their colleges and universities stiffen the requirements for admission into teacher education programs (Letherman, 1988). There is little consistency in the increased requirements among states except that at least seventeen of these states now require passage of a basic skills test prior to admission into teacher education. A few have increased the minimum grade point requirement for admission. At least three have abolished most undergraduate degree programs in education thereby allowing very limited undergraduate coursework in education or requiring a fifth or more year of study.

4. At least thirty-two states have mandated curriculum changes for students who plan to become teachers. Again, there is little consistency in this curriculum reform among the states (Letherman, 1988). Some states increased the liberal arts requirements, some increased subject matter requirements, some increased pedagogy, and some increased field experiences.

5. Since the mid 1980s, twenty-one states have embraced the notion of alternative certification. From comparable databases, the implicit standards for an alternative certificate are three: (1) an earned baccalaureate degree, (2) an acceptable score on a certification test, and (3) participation in an internship or teacher training (i.e., as contrasted with teacher education) program (McKibbin, 1988).

6. Forty-six states allow emergency certification in subject areas where there is a deemed shortage of certified teachers; thirty of these states permit renewal of the certificate with additional university coursework.

7. Teachers are increasingly becoming involved significantly in policy decisions affecting teacher certification and teacher preparation. The legislatures of at least four states (California, Minnesota, Nevada, and Oregon) have created teacher-laden autonomous boards which are involved in evaluating and improving standards for teacher certification, setting standards for entrance into the profession, and

prescribing preservice teacher education programs (Cruickshank & Cruz, 1989). In other states, teachers wield considerable policy influence on teacher certification by serving in an advisory capacity to the state's board of education. In some states, teachers influence policy through teacher associations or collective bargaining agreements.

8. All fifty states apparently offer alternative certification programs for full-time teachers of at least some segments of vocational education at the secondary level (e.g. trade and industrial education). Forty-three states require part-time secondary vocational instructors to be certified by the state department of education (Milanovich, 1986). These alternative requirements have elements which are general for all vocational teachers and then some specific requirements for the vocational subject matter areas in which the teachers are employed. The terminology used and the specific requirements for the various certificates are extremely varied among the states and among the vocational subject areas (Struck, 1986). The common element seems to be to allow occupational experience as a substitute for academic preparation.

9. Twenty states require certification for instructors of postsecondary vocational programs and sixteen require certification for teachers at the adult level (Struck, 1986).

10. In 1985-86, twenty-six states required occupational competency testing as an initial certification requirement for vocational teachers (Pratzner, 1988). Although not evident from Pratzner's report, it is assumed that this occupational testing requirement was in existence prior to 1983. According to Duenk (1989), there are eight different types of competency assessment in use among the states. The most common type of assessment is state licensure in occupations such as in various health fields, cosmetology, plumbing, and auto mechanics.

11. For vocational teacher certification, most states require from three to six or more years of work experience in the occupation to be taught (Pratzner, 1988, p. 66).

Teacher Testing

Perhaps the fastest-moving change in the whole arena of teacher reform has been in the area of teacher testing. Virtually every state now requires that its teachers be tested either through a basic skills test, a subject matter knowledge test, and/or on professional knowledge. As early as the mid-1970s, only Georgia and Louisiana mandated competency examinations as a criterion for teacher certification; ten years later, forty-six states had done so (Sandefur, 1986; Darling-Hammond & Berry, 1988).

The specific tests that are used and when they are used varies from state to state. The most comprehensive data, provided by Sandefur (1986), indicates that forty-four states require a test of basic skills, thirty-two require a test of professional knowledge, thirty-one a test on subject-matter knowledge, and fourteen require testing on the job. Twenty-five states require some form of testing at the admissions level into teacher education and forty-one states require testing prior to initial certification. About half the states apparently use all or parts of the National Teachers Exam (NTE); others use state customized tests, the Scholastic Aptitude Test, those provided by the American College Testing program, and/or the California Achievement Test. At the present time, nearly all teacher tests are paper-and-pencil, multiple-choice type examinations designed primarily to measure facts, analogies, fundamental processes, and the type of knowledge generally expected from a study of the liberal arts, educational foundations, educational psychology, and subject matter. A few states are experimenting with performance testing and with on-the-job evaluation of competencies for nontenured teachers mostly through classroom observations of institution and class management.

Needless to say, regardless of their substance, format, or the time at which administered in the teacher's professional career, teacher testing is extremely controversial. The issues surrounding it are numerous but probably can best be categorized into three fundamental problematic areas germane to all of teaching and one specific to teachers of vocational subjects:

1. The tests appear to discriminate significantly against certain minorities. Studies consistently show that a disproportionate number of ethnic minorities, especially Blacks, Hispanics, and American Indians, fail to meet established standards on teacher exams. As a result, Educational Testing Service (ETS) research reports indicate that the percentage of ethnic minorities in the teaching force in the United

States could be reduced by as much as fifty percent—to less than five percent of the total teaching force—by the year 2000 if teacher preparation fails to enhance their ability to pass teacher exams (Fields, 1988).

2. The tests do not measure what is important to know and be able to do to demonstrate effective teaching. The education profession itself has yet to agree on a reasonable codification of teachers' professional knowledge. Thus, existing tests, especially state-developed tests, appear to draw their professional knowledge items almost exclusively from the field of educational psychology (Melnick & Pullin, 1988). Although important to effective teaching, generally no educator agrees that a knowledge of psychology is all that is important. There is a much larger body of knowledge that must be learned to teach effectively. Furthermore, say the critics of teacher tests, no standardized test can accurately measure such essential qualities as dedication, motivation, perseverance, caring, and sensitivity. Thus, teachers, administrators, and researchers who have examined currently-used teacher tests do not consider them to be valid measures of potential nor of actual teaching effectiveness.

3. A third major broad issue is associated with various process questions; for example, who is to be tested, at what point in their careers are they to be tested, and at what price? (At least two states are requiring that all teachers—even those who have been certified and teaching successfully for years—be required to pass a functional academic skills or literacy test periodically in order to retain their teaching certificates.) Should all teachers be required to pass a test, including teachers with vocational, emergency, alternative, or one of the other certification options listed earlier? Who pays for the tests? And what effect does all of the hassle, anxiety, and cost have on the supply of prospective teachers especially as segmented by minority groups, those with other career options, the financially disadvantaged, and those for whom testing is a major barrier?

In regards to testing being a major barrier, several authors have expressed concerns that extensive teacher testing may preclude many occupationally experienced and skilled craftspeople from entering vocational teaching. Pratzner (1988) speculated that "raising basic skills test requirements for vocational teachers could discourage competent craft persons and technicians from high school teaching, push them out of the teaching profession altogether, or push them toward teaching in the private sector . . ." (p. 71). Duenk

commented that many T&I teachers were in an age bracket where pursuit of a degree and its inherent testing requirements were "impractical from a time and money standpoint" (p. 22). Adams, Pratzner, Anderson, and Zimmerer (1987) noted that prospective vocational teachers from colleges, the military, or business and industry are "likely to reconsider their career options . . . [and] shift their employment preference toward [that] in the private sector where entry requirements are less imposing and remuneration is more attractive" (p. 25).

Despite the many limitations of teacher testing, no one seriously expects to see its elimination within the near future. Many of the tests are undergoing revision, and it is expected that new forms of testing will soon be available.

Programmatic Requirements for Teacher Education

A third significant nationwide reform in the education of beginning teachers has been in the programmatic requirements imposed on colleges and universities by state policy boards. The most common change has been to require an increase in the standards for entry into college and university teacher education programs. At a minimum, this typically involves requiring a formal application into professional teacher education; a satisfactory score on some form of a standardized test (e.g., ACT/SAT) or the Pre-Professional Skills Test (PPST) provided by the Educational Testing Service; and a 2.5 grade point average on a prescribed number of credit hours.

From thereon, the state policy decrees for programmatic requirements in the preparation of teachers have varied significantly throughout the country. Thus far, thirty-two states have mandated that curricular changes be made, and a few have actually dictated the specific curriculum for teacher education students.

Although national data specifically mapping curriculum changes are apparently unavailable, four definite trends are noted in the literature. First, there is a definite and strong trend to require increased preparation in the liberal arts. Secondly, the courses in the subject matter to be taught by prospective secondary teachers are being increased. Third, institutions have been mandated to increase the involvement of the public schools in the preparation of teachers; most apparently by increasing the number of field-based education courses students must take. Fourth, teachers and other public school practitioners are increasingly being involved in determining the curriculum for prospective teachers; in fact,

teachers (through teacher organizations) are now represented in major numbers in the National Council for Accreditation of Teacher Education (NCATE), the agency which accredits professional education units at colleges and universities.

These trends are especially apparent in the colleges and universities in the fifteen states which are members of the Southern Regional Education Board (SREB). According to Hawley, Austin, and Goldman (1988), about two-thirds of the colleges and universities in SREB states now require students seeking certification in secondary schools to major in a subject other than education. Few require an academic major other than education for elementary, middle school, or special education teachers; however, the trend may be for them to do so. For example, "North Carolina, Tennessee, Texas, and Virginia have enacted such policies; other [SREB] states have this requirement under consideration" (p. 12). Concurrently, sixty-four percent of the responding institutions in Hawley et al.'s survey reported an increase in field experience requirements. The authors concluded, "Most of the impetus for increased emphasis on field experiences in education courses and more time spent in practice teaching seems to be coming from state legislatures and classroom teachers" (p. 5).

Regardless of the college which controls the degree (i.e., education vs. liberal arts vs. subject matter), the result of state policy changes in programmatic requirements for teacher education is a general decline in the number of formal professional education courses. According to Darling-Hammond and Berry (1988),

> improving teacher preparation seems to mean reducing the amount of time devoted to traditional teacher education. To the extent that there is a conception of teaching underlying these [policy] moves, it is a view that liberally educated students require little more than guided practical experience to learn how to teach effectively. The claims to a specialized knowledge base that undergird the development of a profession fall on deaf ears. (p. 17)

These changes in programmatic requirements may be the most troublesome of all for vocational teacher education nationwide. The data from Pratzner's (1987) survey was collected from the chief vocational education program administrators at sixty-nine colleges and universities and from seven hundred and forty beginning vocational teachers representing twenty-four states in eight regions. This data reveals the following:

- With the exception of more frequent use of the NTE, there had been little or no change in the type or rigor of program or admission requirements into or graduation from vocational teacher education since the early 1980s.

- Twenty-six percent of the vocational teachers surveyed had not completed a baccalaureate degree; however, when segmented, seventy-three percent of the trade and industrial teachers, fifty percent of the health occupations teachers, and fifty percent of the technical teachers did not have baccalaureate degrees. As noted earlier in this paper, only two states currently require a baccalaureate degree for T&I initial teacher certification (Duenk, 1989).

- The number of credit hours taken in mathematics by vocational education teachers was about the same as the average number taken by either teachers of academic subjects or by arts and science majors; in English, the number of credits taken by vocational teachers was slightly less than the other two groups.

- In each of the other three academic areas (social science, humanities, and science), the credits taken by teachers of academic subjects and arts and science majors greatly exceeded those taken by vocational teachers.

- Nearly fifty-two percent of the vocational administrators surveyed said they had no plans to increase the number of credit hours required in the liberal arts.

- "Nothing in [this] study would lead one to conclude that in general, the quality of students or the quality or rigor of the undergraduate [vocational teacher education] program has increased since the early 1980s" (Pratzner, 1988, p. 70).

It should be noted that there were differences in several programmatic requirements in vocational education units affiliated with the University Council on Vocational Education (UCVE). According to Anderson (1986), "pre-student teaching competency testing and increased GPA requirements, both at entry into educational studies and at graduation, were noted as trends in [UCVE-affiliated] undergraduate education" (p. 141) and "the quality of students admitted to [UCVE-affiliated] undergraduate programs has increased" (p. 9).

The accumulative effects of all of the reform movements on vocational teacher education and, for that matter, vocational education are as yet unknown. There is some evidence from the Pratzner study (1987) that vocational teacher education hasn't been affected very much and, indeed, hasn't changed much in relation to the major themes or tenets of the teacher education reform movements. In general, the few universities that noted significant changes congruent with teacher education reform were those affiliated with the UCVE.

For the most part, policy changes involve highly specifiable variables such as years of educational preparation or experience, degrees, scores on tests, and numbers of academic and professional credits. On the one hand, this may reflect a bureaucratic tendency to verifiable oversight. On the other hand, it may suggest a lack of information on which

policy decisions can be based. Evans (1988) noted that colleges of education rarely support substantial programs of research on teacher education. It was not until 1984 that the American Educational Research Association included a section addressing teacher education. Adamsky and Cotrell concluded in 1979 that vocational teacher education is considered "an ancillary activity" within vocational education research. Kelly (1988) and Schultz (1988) found nearly ten years later that the major research thrust in vocational teacher education (at least as judged by publication in refereed journals) is to identify teacher occupational competencies, primarily through task analysis methods. Research designed to answer crucial questions about vocational teaching, teacher testing, teacher education, and certification is essential in order to provide information for policymakers and other decision makers.

RELEVANT DATA ON TEACHER EDUCATION

It is important to note at the outset that there does not seem to be at this time any valid, reliable, reasonably comprehensive data collected on the nature, scope, and condition of vocational teacher education. It is known that there are approximately four hundred and thirty-five colleges and universities that purport to have one or more of the traditional vocational teacher education programs. Some colleges or universities have just one of the programs; some offer teacher education in all of the traditional vocational education program areas, including a program to prepare vocational teachers for special populations. The various directories published by the federal Department of Education, the American Vocational Association, or program area teacher groups indicate that there are ninety-two teacher education programs in agriculture, two hundred and thirty-seven in business education, thirty-one in health education, two hundred and sixty-seven in home economics, one hundred and seventy-six in technology education (industrial arts), eighty-nine in marketing education, one hundred and twenty in trade and industrial education, and ninety-nine in special needs.

For the most part, what is known about vocational teacher education has to be assumed as a part of or extrapolated from data collected by researchers in other teacher education subject areas. Thus, in this section of the paper, some of the national databases and research studies on the general composition of teacher education programs are presented.

Where appropriate, the specific data that are known about vocational teacher education are identified and presented.

The majority of the research findings reported herein emerge from research supported by the American Association of Colleges for Teacher Education (AACTE). Research About Teacher Education (RATE) and Teacher Education Pipeline (TEP) represent two of the most recent attempts to establish a reliable data bank of basic information about teacher education. RATE is devoted to collecting information about colleges and universities that engage in teacher education, as well as teacher education programs, faculties, and students. This project has been envisioned as an ongoing attempt to obtain accurate and reliable data on programs of teacher education.

The presentation of research findings is organized according to the heuristic used by Lanier and Little (1986) in their review of research conducted on teacher education. The organizational framework centers on Those Who Teach Teachers, Students of Teaching, The Curriculum of Teaching, and The Milieu of Teacher Education.

Those Who Teach Teachers

The following data has been taken from research done by the AACTE (1987, pp. 22-31):

Current Demographics

- The education professorate is about ninety-three percent White, nearly three percent Black, and about three percent Hispanic. Asians and Pacific Islanders represent about one percent of the professorate, while American Indians, Alaskan Natives and "other" minorities contribute only a trace. Overall, about seventy percent of education faculty are White males.
- The professorate is over seventy-five percent tenured.
- The average age for professors is fifty-three years old; for associate professors, forty-seven years old; and for assistant professors, forty-two years old.
- Nearly forty-five percent of the professorate have achieved the rank of professor, and approximately half of these are more than fifty-three years old.

- About ninety percent of both the professors and associate professors hold doctoral degrees. That number drops to about two-thirds for assistant professors.

- More than ninety percent of secondary methods faculty reported experience in other levels of education institutions, primarily as elementary and secondary teachers and/or administrators. Only seven percent reported having no experience in schools. Faculty averaged almost nine years of experience in schools, and almost all of them reported having had classroom teaching experience.

The Future Professorate

- Men dominate the rank of professor, but women comprise the majority at the assistant professor rank. Whereas more than four-fifths of the faculty who held the rank of professor are male, only two-thirds of the associate professors and less than half of the assistant professors are male. One can project that more women are likely to be promoted to the rank of professor in the future.

- The composition of the doctoral candidates enrolled in the institutions represented in the RATE study show that women dominate doctoral programs in education fifty-seven percent to forty-three percent.

Academic Activities

- Sixty percent of a teacher educator's time is devoted to teaching, twenty-two percent for service, and fifteen percent for scholarship.

- Faculty in institutions awarding the Bachelors reported that they teach the equivalent of about 7.5 courses, while Doctoral institution faculty teach slightly over five courses.

- The largest percentages of faculty from institutions supervise student teachers; more than a third supervise early field experiences.

- Slightly more than half the faculty at institutions awarding the Masters or Doctorate conduct workshops for teachers, compared with a quarter of the faculty at institutions granting the Bachelors.

- Of the Doctoral institution faculty surveyed, twenty-one percent devote time to research in K-12 schools; however, only nine percent of faculty in institutions awarding the Masters and three percent in institutions awarding the Bachelors devote time to this activity.

Students of Teaching

It has been widely chronicled that students entering teacher education programs do so with weak academic backgrounds and maintain poor academic records throughout their college careers. Much of the myth and misrepresentation about what is known about prospective teachers has been perpetuated by the popular press. It is distressing that little is done to counteract these perceptions. Lanier and Little (1986) state that "the research on students of teaching over the past decade tends to be desultory in nature, poorly synthesized, and weakly criticized" (p. 535). The recent databases support few of the commonly negative perceptions about students of teaching. The data presented below is divided into four categories: Student Demographics, Quality of Education Students, Reasons for Becoming a Teacher, and Career Plans.

Student Demographics

- The average age of junior and senior students enrolled in undergraduate teacher preparation programs is about twenty-three years. The average age upon graduation will be between twenty-four and twenty-five (AACTE, 1987, p. 37). The average age for beginning vocational education teachers is thirty-three, with a range of twenty-two to sixty-six years of age (Pratzner, 1988).

- About ten percent of the students enrolled in teacher preparation programs are postbaccalaureate students. The postbaccalaureate students are older with an average age of thirty-four years. Slightly more than three quarters of both undergraduate and postbaccalaureate teacher education students are women (AACTE, 1987, p. 37).

- The ethnic composition of students is eighty-nine percent White, five percent Black, three percent Hispanic, and three percent divided among Asians, Pacific Islanders, Native Americans, and Alaskan Natives. The data shows that the overwhelming majority of students are White women (AACTE, 1987, p. 37).

- More than one million K-12 students are classified as limited English proficient (LEP); however, less than one percent of prospective teachers are specializing in bilingual education (AACTE, 1988, p. 12).

- The proportion of Black, Hispanic, Asian, and American Indian/Alaskan Native elementary and secondary students is far greater than that of the future teaching force (AACTE, 1988, p. 11).

- The teacher education students can be characterized as "nonurban"; this is true of ethnic minority as well as White students. Only about five percent of the students came from urban centers of half a million people or more.

Approximately two-fifths came from suburban communities and another two-fifths identified themselves as coming from rural areas (AACTE, 1987, p. 41).

Quality of Education Students

- Students enrolled in teacher education programs are average or slightly above average in academic performance compared with undergraduate students in general. Education students can be described accurately as "a solid B" with cumulative grade point averages in the 3.0 range, including a 3.0 average in their general liberal arts courses (AACTE, 1987, p. 41).

- The average SAT math scores of education majors range from 475 to 509 and SAT verbal scores of 451 to 476, slightly above the average for college-bound students (AACTE, 1987, p. 43).

- The typical teacher education student is in the top third of his or her high school graduating class (AACTE, 1987, p. 43).

Career Plans

- Nearly half of the education majors believe their teaching careers will span ten or more years, and twenty-seven percent project more than twenty-year teaching careers. Only thirteen percent of the students believe that they will spend less than five years as teachers (AACTE, 1987, p. 45).

- Eighty-two percent of the students indicated that they prefer to teach in rural or suburban environments. Only eighteen percent, given the choice, would opt for urban areas, and most of those would prefer cities under five hundred thousand (AACTE, 1987, p. 45).

- Teacher education students want a "traditional classroom" in a "traditional school" in "a middle-income neighborhood" with "children of average ability." Three-fourths of the students opted for these characteristics (AACTE, 1987, p. 44).

- The teacher education student respondents showed little interest in teaching handicapped children, low income children, and children of low ability (AACTE, 1987, p. 44).

The Curriculum of Teaching

Varying among institutions and within disciplines, there is a broad assortment of approaches to the education of teachers. Typically, what can be found are programs consisting of two years of general studies before admission into professional studies;

coursework in educational foundations; coursework in methods and curriculum specific to a discipline area; field-based experiences, which are usually a part of either the foundations or methods courses or both; and a culminating student teaching experience. Although standard program requirements dominate the structure of teacher education, the ways to satisfy these requirements are numerous as evidenced by the multitude of ways in which teachers can be certified to teach.

The following data is illustrative of what is known about the anatomy of teacher education programs. This data provides a general description of the curriculum utilized in a typical teacher education program. The data is largely representative of elementary and secondary teacher education programs. With some exceptions, much of what is presented is thought to be similar in nature to the general composition of college- or university-based preservice vocational teacher education programs. The data compiled by the AACTE (1987, pp. 13-19) is organized into the following categories: General Program Requirements, Secondary Methods Courses, and Quality of Teacher Education Programs.

General Program Requirements

- Secondary teacher education students complete an average of one hundred and thirty-five semester credits to graduate within a four-year span as follows: general studies, fifty-two hours; academic major, thirty-nine hours; academic minor, eighteen hours; education methods, seven hours; education foundations, nine hours; and student teaching, ten hours.

- Typically, students spend one or two days per week observing or tutoring in schools for approximately twelve weeks, often during the initial phases of the teacher education program.

- On the average, ten credit hours are awarded for the student teaching experience, which typically lasts for twelve weeks.

- The university supervisor in an institution awarding the Bachelors averages seven visits to a student teacher during the semester, while supervisors at institutions granting the Masters and Doctoral degrees average six visits.

- Overall, tenure-track faculty supervise approximately seventy-five percent of the student teachers. Graduate assistants provide on the average less than thirty percent of the student teacher supervision in institutions offering the Doctorate.

Secondary Methods Courses

- In general, secondary education faculty and students depict their methods courses as focused, well-designed, and having considerable instructional variety. Students perceive their secondary methods courses to be helpful in pursuing their goals.

- Fifty percent of the faculty require students to work in schools as a component of the methods courses. These field-based activities usually come after the early field experience but before student teaching. Four school-based activities are typically assigned to students in methods courses.

- When asked to name which individual had been most helpful in modeling teaching styles and strategies worth emulating in their teaching, the students cited as follows: education professors, twenty-nine percent; other professors, eighteen percent; other teacher education students, two percent; and others, five percent. Cooperating teachers (twenty-six percent) and their own elementary or secondary teachers (twenty percent) were the remaining role models.

- A majority of the students believe their teacher education programs contribute significantly to their academic, intellectual, and creative abilities.

Quality of Teacher Education Programs

- The majority of faculty and students reported perceptions that education courses are "as rigorous" or more so than noneducation courses. A third of the students cited "more rigorous," while the largest percentage of faculty (forty percent) cited "as rigorous."

- About half of both the students and the faculty responding believe that education courses require more time than noneducation courses.

The Milieu of Teacher Education

The data presented below (AACTE, 1987, pp. 6-7) represents a very narrow perspective of the milieu of teacher education. The data suggests that the education major offers an important contribution to institutions of higher education which house teacher education programs.

- Full-time undergraduate students in education comprise twelve percent of the full-time undergraduate students in institutions offering the Bachelors, thirteen percent in institutions offering the Masters, and eight percent in institutions offering the Doctorate.

- Part-time education students comprise twelve to fifteen percent of the undergraduate part-time student body.
- In institutions awarding the Masters, education students comprise one-third of the full-time graduate student body and more than one-third of the part-time graduate students.
- In Doctoral institutions, education graduate students make up fourteen percent of the full-time graduate student body and more than one-fourth of the total part-time graduate student enrollment.
- On the average, an institution offers eight to twelve distinct teacher education programs.
- Historically Black Institutions (HBIs) represent only five percent of the institutions of higher education. However, these institutions have produced sixty-six percent of the Black teachers in the United States (SREB, 1986).

Implications for Vocational Education

The data that has been collected by the AACTE (American Association of Colleges for Teacher Education) portrays teacher education in a generally favorable light. The education professor holds a doctoral degree; is an experienced teacher or administrator; spends the majority of his or her time teaching, supervising student teachers, and writing journal articles; and is professionally involved. Education students are slightly above average, feel good about their teacher education program, and are interested in a career in teaching in a traditional classroom. The teacher education curriculum is considered focused and well designed, rigorous, balanced, and is felt to contribute in important ways to the goals of the students. Education students comprise a significant portion of the total enrollment at colleges and universities, and sixty-six percent of the Black teachers in the United States have been prepared at HBIs. Information from additional databases on teacher education currently being developed should also provide important information to help establish policy and set standards for teacher education programs.

However, before policy decisions for vocational teacher education are finalized, it is hoped that additional data and information will be collected and provided to policymakers. It is simply unknown at this time if vocational teacher education professors, students, or curriculum parameters are similar to those profiled through the various databases. Empirical evidence provided by vocational educators at various conferences and that has

appeared in the professional literature would indicate that some of the data provided herein is not typical for vocational education and that data relevant to vocational teacher education may not have been included in the database. This observation is based on factors unique to vocational education such as the following:

- The certification of some vocational education teachers requires considerable occupational experience in business and industry.
- The subject matter knowledge base for vocational education teachers is not usually found in disciplines typically located in the arts and sciences or sometimes not even within a university.
- For significant numbers of vocational education teachers, the major fields of college study are not administered in either an education unit or in the arts and sciences.
- Vocational teachers teach a wide range of students from diverse environmental backgrounds in middle schools, high schools, skills centers, vocational-technical institutes, community colleges, and adult education centers.
- Nearly all vocational education teachers sponsor and advise a co-curricular student organization. These organizations are an integral part of the students' vocational education curriculum.
- Many vocational education teachers are not prepared through a college or university teacher education program.

As in general teacher education, there is a great need for research to be conducted on vocational teacher education. Among the major purposes for establishing a database on vocational teacher education programs is (1) to provide accurate, reliable data for making informed decisions and (2) to challenge those who are making headlines with their negative assertions regarding the worth, quality, and need for programs of teacher preparation. While it is not guaranteed that the results of this research will portray vocational teacher education programs in an entirely positive light, now is the time to carefully study and reflect on the quality and substance of these programs. Critically analyzing this data will provide a better understanding of the overall structure, substance, and quality of current teacher education programs. This data will also provide insight into future needs of vocational teachers and to the direction of vocational education in general.

Reform should be nurtured from a desire to understand rather than from a perceived need to renovate. Establishing a national database of information on vocational teacher education programs should be a first step toward improving vocational teacher education.

KNOWLEDGE BASE FOR VOCATIONAL TEACHER EDUCATION

Programs of vocational teacher education need research specifying the knowledge base underlying teacher preparation. What is the appropriate knowledge base on which to build vocational teacher education programs? This is indeed a controversial question, and inadequate answers have resulted in considerable policy inconsistency throughout the country.

Several reform groups have focused strictly on the subject matter and/or the arts and sciences component of teacher preparation. A consistent recommendation has been to require teachers to have a degree in the arts and sciences or—if modified to include vocational education—a degree in the subject matter to be taught. Thus, the Holmes Group (1986) states, "Teachers must have greater command of academic subjects" (p. 4) and "should teach only subjects they both know well and can teach well" (p. 15). The Carnegie Forum on Education and the Economy (1986) says that ". . . a bachelors degree in the arts and sciences [should be required] as a prerequisite for the professional study of teaching" (p. 3). Some policymakers in some states have carried these reform recommendations to the extreme and have implied, through their actions, that it is *only* a degree in the arts and sciences or in the subject matter that is important to effective teaching. They allow for very limited preparation in other aspects of the knowledge base for teacher preparation such as in professional education studies.

It is not in the purview of this paper to recommend or not to recommend restructuring of any vocational teacher education program to mandate a degree in the arts and sciences nor even in the subject matter appropriate for vocational education programs (e.g., agriculture, business, engineering, or home economics). Having a degree in the subject area does not necessarily ensure competence in the vocational subjects being taught. Nor, in many instances, is there one appropriate arts and sciences or subject matter major to accommodate a particular vocational education program area. For example, what does one major in at a university to become a welding teacher, a secretarial or office practice teacher, a technology education teacher? While we acknowledge that vocational teachers need to know and to understand well the content they teach, we must seek further empirical data to enable us to make more informed decisions about the depth and breadth of the knowledge required, the best way(s) in which to acquire that knowledge, and the best delivery systems to organize and sequence the knowledge and pedagogy needed by prospective vocational teachers.

Education professors and researchers who are advocates of reform in teacher education base their arguments on the belief that there does exist a knowledge base for teaching that, according to Shulman (1987), "consists of a codified or codifiable aggregation of knowledge, skill, understanding, and technology, of ethics and dispositions, of collective responsibility—as well as a means for representing and communicating it" (p. 4). Historically, the knowledge base for teachers has been represented in the "professional component" category of teacher education, typically through educational psychology and foundations courses and subject-specific curriculum and methods courses. It is this professional component that, according to Jones (1988), has not produced a wide research base to support its significance in the teacher education curriculum. Many critics share Gage's (1984) belief that teacher education students have been given inadequate grounding in how to organize a course, how to plan a lesson, how to manage a class, how to give an explanation, how to arouse interest and motivation, how to ask various kinds of questions, how to react to students' responses, how to give helpful correction and feedback, how to avoid unfair biases in interacting with students—in short, how to teach (p. 92).

National studies of the competencies needed by vocational education teachers have been conducted. Using results from these studies, many vocational education teacher preparation programs have used a competency-based approach in order to avoid the weaknesses noted by Gage. It isn't just a competency- or skill-based approach that is necessary for effective teaching, however. According to Sykes (1983), teachers need to know how to identify, frame, and solve problems. They need to be able to reflect on their practice and conduct action research on the peculiar circumstances of their own teaching. In addition, Shulman (1987) said teachers need to be able to transform their action research, understandings, desired attitudes, and values into pedagogical representations and action or, more simply stated, use good methodology. Both Sykes and Shulman believe that special knowledge is required of teachers to enable them to do these things. They express considerable value in the "professional" component of teacher education, and both are actively involved in research on the professional knowledge base for teachers.

Shulman, Grossman, Richert, and their colleagues at Stanford University are actively engaged in the study of the knowledge growth of teachers. Shulman's work (1987) has enabled him to identify the following categories of the knowledge base for teaching:

- Content knowledge.

- General pedagogical knowledge, with special reference to those broad principles and strategies of classroom management and organization that appear to transcend subject matter.
- Curriculum knowledge, with particular grasp of the materials and programs that serve as "tools of the trade" for teachers.
- Pedagogical content knowledge, that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding.
- Knowledge of learners and their characteristics.
- Knowledge of educational contexts, ranging from the workings of the group or classroom, the governance and financing of school districts, to the character of communities and cultures.
- Knowledge of educational ends, purposes, and values and their philosophical and historical grounds. (p. 8)

Adapting Shulman's parameters for the knowledge base of teaching to vocational education rests on two fundamental assumptions: (1) vocational teachers will acquire a thorough grounding in the content or subject matter to be taught, and (2) teachers will become well grounded in the judgments and standards for choosing the content and delivery systems appropriate for the client groups (e.g., students and employers) they are serving. According to Shulman (1987):

> The key to distinguishing the knowledge base of teaching lies at the intersection of content and pedagogy, in the capacity of a teacher to transform the content knowledge he or she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by students. (p. 8)

In adapting Shulman's knowledge base categories, Lynch (1988) concluded that research on the knowledge base and, therefore, the program design for vocational teacher education should come from the program areas or subject matter disciplines identified with vocational education (e.g., business, marketing, agriculture, and technology); studies of knowledge, ethos, and structure of the workplace; unique vocational subject matter curricula and their interrelated pedagogical knowledge or tools of the trade for teachers; empirical studies of teaching; information on the institutions in which vocational education is offered (including, for example, middle school, secondary, and postsecondary institutions, industry-based programs, and proprietary schools); learning theory and applicable motivation

techniques; knowledge of education ends, purposes, and values and their philosophical and historical underpinnings; and demonstrated practices of effective vocational teachers.

MODELS FOR THE DELIVERY OF VOCATIONAL TEACHER EDUCATION

Historically, vocational teacher education has operated cooperatively but uniquely with other teacher education programs. The uniqueness resulted from factors such as differing certification requirements; the emphasis on technical preparation and business or industry work experience; the number of people entering vocational education teaching and teacher education programs through nontraditional routes; faculty and programs often being administered in an academic unit other than education; supplemental funding from state departments of education; and the frequent use of inservice components for delivery of vocational teacher education.

The historic emphasis on inservice education has been significant in defining the delivery of vocational teacher education. Vocational teachers have often been employed in schools directly from industry without first completing a teacher preparation program and, in some cases, without any collegiate preparation, except, perhaps, a technical degree or a diploma from a postsecondary institution. A provisional certificate to teach was issued until they completed a set of prescribed education courses. Those courses were typically offered by vocational teacher educators, often using nontraditional field-based delivery systems.

Because the practice of employing persons from business or industry was widespread as vocational programs expanded in the public schools, meaningful university-state department of education-local education agency collaborations were established. Many teacher educators were itinerant teachers who spent the majority of their time "on the road" delivering courses and providing a broad range of professional services to provisionally certified teachers. They had only limited additional faculty responsibilities at their employing institution. Some teacher education programs were actually offered through state departments of education rather than from a college or university.

Federal legislation for vocational education and its inherent funding requirements have also had a direct impact on the development and delivery of vocational teacher

education and the roles and responsibilities of vocational teacher educators. That legislation has influenced the development of competency-based curriculum, the provision of inservice education for vocational educators, the emphasis on providing vocational education for students with special educational needs, the attention to program evaluation and follow-up of vocational education students, and other major vocational education initiatives. The legislative priorities have typically been incorporated into vocational teacher education courses, curricula, and program designs and have directly influenced the research and development activities of vocational teacher education.

Vocational teacher education has a history of experience with program models which contain elements recommended in current reform reports. Those components include competency-based instruction, field-based learning, alternative recruitment strategies, and an emphasis on technical preparation for teachers. That experience can be valuable in the design and assessment of teacher education models.

Without clear evidence to support one best strategy for the delivery of vocational teacher education, restructuring efforts should be based on the critical philosophy of the profession as well as the best evidence of effective practice. It should be directed toward achieving the important outcomes of education as effectively and efficiently as possible. Then, with the implementation of new models, research and evaluation must be undertaken to determine the appropriateness and effectiveness of each. As research results become available, additional refinement and strengthening of models can occur.

Based on that concept of reform, this paper presents the structure for three alternative delivery models for vocational teacher education. The three models are (1) a postbaccalaureate model, (2) a restructured baccalaureate model, and (3) a field-based model for recruiting and infusing nontraditional vocational teachers. The models are proposed as general structures which appear to be consistent with the current directions for change occurring in vocational teacher education programs. They can accommodate the goals of reform and can be realistically implemented using available resources in vocational education and vocational teacher education.

Undergirding the development of vocational teacher education program models are the essential elements of reform and the foundations of vocational teacher education. They include the following:

1. Vocational teacher education encompasses a number of teacher preparation programs with unique subject-matter content requirements, but with the common focus of preparing teachers skilled in the design and delivery of vocational education as it is and should be offered in public schools, vocational and technical institutions, and community colleges.

2. There are unique qualities and requirements for vocational education personnel and an identifiable knowledge base for vocational teacher education that should be included in any delivery model.

3. There is a need for flexibility and variation in the delivery of vocational teacher education that allows response to state, institutional, and student characteristics and needs. Particular attention should be given to the development of models which will meet the demand for vocational education teachers and use qualified personnel prepared through college and university vocational teacher education programs in doing so.

4. The design of vocational teacher education models should draw on the experience of the profession with competency-based education, alternative delivery systems, field-based teacher education, and broad-based recruitment strategies.

5. Vocational teacher education delivery systems should be designed to attract and retain potentially successful teachers from a variety of sources with particular emphasis given to the identification of ethnic minority candidates and persons with recent business or industry experience.

6. Vocational education teachers and teacher educators must demonstrate competence through appropriate testing in academic and basic skills, pedagogy, the planning and managing of vocational education, and relevant technical skills.

7. The delivery of effective vocational education requires a complex set of knowledge and skills which cannot be mastered in a short time. A differentiated staffing pattern in vocational education should allow the participation of people with specific skills and the opportunity for them to advance professionally as they increase their knowledge and skills as vocational educators.

Effective program models for the delivery of vocational teacher education can retain the essential identity and philosophy of vocational education while achieving the key goals of educational reform. That includes (1) a broad-based curriculum containing an appropriate balance of liberal studies, pedagogy, and subject matter preparation; (2) continued exposure to and experience with effective practices in the many types of schools where vocational education is offered and in business and industry; (3) meeting or exceeding standards as established by all agencies with accrediting jurisdiction for the curriculum; and (4) a curriculum designed and managed by persons who are qualified academically for appointment to the college or university faculty. Instruction should be provided as appropriate by teacher education faculty, faculty from academic units responsible for liberal studies, faculty from relevant subject matter and professional education studies, and current practitioners who serve as "clinical professors."

Successful completion of any vocational teacher education curriculum should, at a minimum, qualify the graduate for a baccalaureate degree and for full certification as a probationary teacher. Structures for vocational teacher education should be most responsive to achieving appropriate education and vocational education outcomes rather than to the goals of any specific educational reform report.

A Postbaccalaureate Model

The basic structure of a postbaccalaureate model for vocational teacher preparation is generally consistent with the philosophy of the Holmes Group (1986). Teacher preparation will be provided to persons who have completed a baccalaureate degree in the academic area in which they are preparing to teach. The teacher education program will be administered at the postbaccalaureate level and will consist of an intensive study of teaching combined with significant, reflective practice.

Prior to acceptance into a vocational teacher education curriculum, the student will have completed a baccalaureate degree with an existing subject matter or specially designed major related to a vocational education certification area. Admissions standards, including testing, will be used to evaluate the quality of academic preparation, technical competence, and qualification for graduate study.

The postbaccalaureate curriculum will support an intensive, rigorous study of the philosophy and principles of education and vocational education, pedagogy, and the relationship of pedagogy to the subject matter to be taught. Rather than concentrating exclusively on the development of specific pedagogical knowledge and competencies, the concentrated teacher education curriculum will support the study of teaching/learning processes and models related to vocational education and to the technical subject matter. The goal is to prepare professional educators who can create more effective forms of vocational instruction rather than to develop teachers with a specific set of instructional skills.

The teacher education program is managed through a college or university committed to vocational teacher education with extensive involvement of the faculty of schools offering comprehensive, quality vocational education programs. The curriculum will be planned and instruction and supervision will be provided through cooperative efforts involving teacher educators, subject matter specialists from the college or university, expert vocational education teachers, school administrators, and business people.

With successful completion of postbaccalaureate requirements and certification in a vocational education subject area, the teacher will be prepared to move through a shortened probationary period into a tenured teaching position.

A Restructured Baccalaureate Model

Currently, most teachers enter vocational education with a baccalaureate degree with some (particularly in the trade and industrial and health occupations areas) beginning to teach without a four-year degree. Most vocational teacher education programs and resources are concentrated at the undergraduate level and certification requirements for beginning teachers traditionally require the baccalaureate degree for most beginning vocational teachers. Given that status and the continuing debate regarding the need for postbaccalaureate preparation for the probationary teacher, a restructured four-year program is an appropriate, testable model for the delivery of vocational teacher education.

To meet the challenges of reform and to maintain a four-year program, several structural changes will be necessary that may be considerably different from current practice. A strong commitment will be needed from the college or university to prepare

vocational education teachers through an effective, integrated four-year program. Students should be selected based on carefully developed admission standards at, or shortly after, the beginning of the four-year program and continually monitored throughout the program to insure the academic capabilities and subject matter underpinnings to master the knowledge and skills required of the professional vocational educator.

A restructured curriculum will include mastery of liberal studies through a coherent, sequenced program (rather than from a collection of independent courses) and a comprehensive, technical preparation in the subject matter which the vocational educator is preparing to teach. That curriculum will require cooperative planning and scheduling between vocational teacher education faculty and the faculty of the other disciplines.

A restructured education curriculum should integrate the study of pedagogical and vocational philosophy and methodology with subject matter specialization and field-based experiences. Such restructuring will require a careful assessment of the critical pedagogical requirements of the beginning vocational education teacher and the design of an integrated, efficient education curriculum. Carefully designed, supervised, and sequenced observations and practicums in public schools, vocational-technical centers, and community colleges will extend from the beginning of the curriculum through its conclusion and will be coordinated with the study of pedagogy. This will allow the prospective teacher continuing opportunities for application, evaluation, and reflection as knowledge and skills develop. A culminating teaching internship in a vocational education program should be jointly planned, implemented, and supervised by the teacher education institution and the school. The student will intern with a master teacher who has effective mentoring skills and who is an active participant in the vocational teacher education program as a clinical professor.

A unique element of vocational teacher preparation is practical job experience. Extended part-time work experiences or intensive internships in business or industry should be part of the curriculum design to enable students to apply technical skills and to refine a philosophy of work and vocational education. Innovative, more efficient methods of attaining that work experience will be required in a four-year teacher preparation program.

Upon completion of the baccalaureate program, the student will be credentialed as a probationary teacher. The employing school will be responsible for administering a

comprehensive program to successfully induct the beginning vocational teacher into his or her professional responsibilities.

A Field-Based Model

The field-based model is designed for prospective teachers who begin to teach in vocational education without completing a teacher education program. Typically, beginning teachers will have at least a baccalaureate degree and extensive occupational experience. However, particularly in trade and industrial education and health occupations programs, a large percentage have historically entered teaching without a baccalaureate degree. The field-based program will allow people with specific skills and extensive occupational experience, which will qualify them for probationary teaching appointments, to develop the pedagogical skills necessary to achieve full certification and tenure.

The design of the field-based program is critical to its success. It requires an extensive and continuing commitment to professional development from a teacher education program and the employing school. Content, instructional resources, delivery of instruction, mentoring, and evaluation are critical to the successful development of the probationary teacher.

The employing school must provide the structure, time, and resources for a clinical environment. The teacher education program must develop administrative structures, curriculum, instructional technology, supervision, and evaluation strategies. An instructional team of vocational teacher education faculty and master teachers serving as clinical professors will be required to cooperatively plan and implement a field-based teacher education program.

Admissions requirements into the field-based program would include (1) probationary employment as a vocational education teacher; (2) documentation of significant employment experience and successful completion of an appropriate technical competency test; and (3) completion of an appropriate baccalaureate degree or (when appropriate) completion of matriculation requirements into a vocational teacher education program.

The curriculum for the field-based model must respond to the immediate as well as the long term needs of the probationary teacher. Critical pedagogical skills needed by the

beginning teacher must be developed through an initial core curriculum. According to McKibbin (1988), several states, including New Jersey, Texas, Georgia, and California, that are using an alternative certification strategy have identified basic elements of the core curriculum. The core focuses on competencies related to (1) teaching and learning processes, classroom management, behavior control, and student diagnosis; (2) curriculum development and instructional techniques; (3) planning the classroom environment; (4) working with parents; (5) language development; and (6) multicultural education. After completing the core curriculum, the probationary teacher will be given a formal evaluation to certify competence in basic pedagogical knowledge and skills.

Prior to completing the core curriculum, the probationary teacher should be used in noninstructional roles or complete only limited instruction under the direct supervision of a master teacher. Upon verification of core competencies, the probationary teacher can assume a broader set of instructional responsibilities while completing the advanced teacher education curriculum as delineated from the researched knowledge base. As the probationary teacher progresses beyond the core, continuing supervision and support of teacher educators and clinical professors will be an integral part of the program. Opportunity must be provided for the nondegreed vocational teacher to obtain a baccalaureate degree within an appropriate timeframe.

Finally, an appropriate and objectively administered education procedure is necessary to verify the effectiveness of a field-based delivery model for vocational teacher education.

CONCLUDING RECOMMENDATIONS

It was the purpose of this paper to discuss the perceived effects of nationally posited and state-mandated reforms in teacher education upon vocational teacher education and to chart some future direction for vocational teacher education within this overall context of reform. The paper discusses the salient features of reform in teacher education as mandated by policy groups in at least forty-six states. Some of the philosophical underpinnings of vocational teacher education are presented, and their uniqueness within teacher preparation is discussed. The paper addresses the issues in vocational teacher education

with regard to reform in initial state certification requirements, teacher testing, and program or curriculum changes. Where available, data on teacher education and vocational teacher education is presented. A proposed framework for determining the knowledge base of vocational teacher education and three alternative, testable models for its delivery are presented.

It can be concluded that not much is generally known about vocational teacher education. There are about four hundred and thirty-five colleges and universities that purport to offer one or more programs of vocational teacher education; however, generalizable information about the program designs, administrative structures, curricular content, faculty, and student census is not known. There is some evidence that vocational teacher education, at least in relatively smaller state colleges or state regional universities, may not have been affected much by reform in teacher education. However, several of the nineteen universities affiliated with the University Council on Vocational Teacher Education have responded somewhat to nationally posited, state-mandated, or university-initiated teacher education reform.

It is proposed that systematic, disciplined inquiry begin to guide reform in vocational teacher education. We simply need to know more about it such as its effects on achieving the important outcomes of education in general and vocational education specifically. Reform should be nurtured from a desire to understand and to improve rather than from a perceived need to renovate. To that end, the following recommendations are offered:

1. A national commission should be established to examine and study vocational teacher education within a context of educational reform, the goals of public education, the philosophy of vocational education, and the knowledge bases for teaching. The commissioners should represent a broad base of researchers, policymakers, and practitioners within and external to vocational education and teacher education. Their essential mission would be to guide the research and development of knowledge and systems necessary to reform effectively vocational teacher education.

2. Data is needed about vocational teacher education: Its scope, administrative structure, design, curriculum, standards, faculty, students, and—perhaps, most importantly—its actual and perceived (in)effectiveness. Accurate data is essential for making informed decisions and launching further informed and enlightened studies.

Perhaps, as a minimum, institutions purporting to offer vocational teacher education need to be surveyed to determine the nature of their programs, faculty, and students. The instruments used by the American Association of Colleges of Teacher Education (AACTE), the National Council for Accreditation of Teacher Education (NCATE), and the National Center for Educational Statistics (NCES) might also be modified to provide better data relative to the needs of vocational education and vocational teacher education.

3. The basic beliefs—the philosophy—undergirding vocational education and vocational teacher education need to be examined and disseminated to ensure that they are accurately reflected in teacher education reform movements. Vocational education and, by inference, vocational teacher education must be kept current, relevant, and responsive to the needs of its client groups, the international workplace, its colleagues in training and education systems, new research, and reform and renewal movements. Vocational education must be an integral part of national education and employment policies. To maintain a comprehensive, viable system of vocational education and vocational teacher education requires a constant reevaluation of our fundamental beliefs and then the utilization of our beliefs to shape future policy and practices.

4. The entire system for controlling entry into and exit from vocational teacher preparation programs needs to be carefully studied for its effects upon all current and prospective members of the vocational teaching force. This speaks to many of the essential elements of teacher education reform; for example, standardized testing prior to admission and upon exit from teacher education, curriculum and degree requirements needed for state certification, and education field-based experience requirements. Some of the requirements unique to vocational teacher education such as occupational experience and occupational competency testing also need to be examined. Such studies should be conducted within a context of the goals and outcomes of education and vocational education and the professionalization of the teaching force. Furthermore, any impact of specific requirements on teacher recruitment, especially from among ethnic minorities and people in the workplace, needs to be identified and assessed.

5. The knowledge bases for teacher education in general, vocational teacher education, and specific vocational subject areas need to be determined in light of the needs of

the workplace and of students. Research on the knowledge base and therefore the program designs for vocational teacher education should come from the subject matter areas identified with vocational education; studies of the knowledge, ethos, and structure of the workplace; unique vocational subject matter curricula and their interrelated pedagogical knowledge; empirical studies of teaching; information on the institutions in which vocational education is offered; learning theory and applicable motivation techniques; knowledge of education ends, purposes, and values and their philosophical and historical underpinnings; and demonstrated practices of effective vocational teachers.

6. Experimentation is needed with varying models of delivery for vocational teacher education. No one delivery model is recommended at this time. Rather three models—a postbaccalaureate model, a restructured four-year model, and a field-based model for "nontraditional" prospective teachers—are initially recommended for further planning, implementation, and evaluation. Certain elements deemed essential in the preparation of vocational education teachers and germane to the outcomes of vocational education should be common in all models; other elements would be cast into an experimental mode and their effects carefully analyzed.

Finally, the authors feel it necessary to state clearly that reform in teacher education is only one component in the overall reform of public education as called for in national studies and implemented through state-mandated reforms. Many of the problems mentioned by the Holmes Group (1986) and others are the result of societal changes and conditions in the public schools, not the quality of teacher education. It is interesting to note that few studies cite poor quality or ineffective teacher education as reasons for teachers' defection or the cause of their low morale. In fact, there are four major reasons why teachers, including those with outstanding college grades and high test scores and liberal arts and science graduates, leave teaching: (1) they don't feel they are successful at it—the intrinsic rewards are simply not present; (2) low pay; (3) overly bureaucratic school structures; and (4) the lack of career advancement. Former vocational education teachers cite two additional reasons for leaving teaching: (1) poor image of vocational education, and (2) low quality students (Lynch, 1986). Thus, poor working conditions in schools have drastically affected teacher retention and limited the pool of people who will consider careers as teachers. Reform in the curriculum and instruction for teacher education will not solve these problems.

REFERENCES

Adams, D. A., Pratzner, F. C., Anderson, B. H., & Zimmerer, M. E. (1987). Vocational teacher education in an era of change. *Vocational Education Journal, 62*(4), 25-27.

Adamsky, R. A., & Cotrell, C. J. (1979). *Vocational teacher education: A review of the research.* Columbus: National Center for Research in Vocational Education, Ohio State University.

American Association of Colleges for Teacher Education. (1987). *Teaching teachers: Facts and figures; research about teacher education project.* Washington, DC: AACTE Publications.

American Association of Colleges for Teacher Education. (1988). *Teacher education pipeline: Schools, colleges, and departments of education enrollments by race and ethnicity.* Washington, DC: AACTE Publications.

Anderson, B. H. (1986). *The status of vocational teacher education in University Council for Vocational Education member institutions.* Fort Collins: Colorado State University, School of Occupational and Educational Studies.

Carnegie Forum on Education and the Economy. (1986). *A nation prepared: Teachers for the 21st century.* New York: Carnegie Corporation.

Cruickshank, D. R., & Cruz, J., Jr. (1988). Trends in teacher preparation. *Journal of Teacher Education, 40*(3), 49-56.

Darling-Hammond, L., & Berry, B. (1988). *The evolution of teacher policy.* Washington, DC: The RAND Corporation.

Duenk, L. G. (1988). *Trade and industrial education requirements in the United States and territories.* Blacksburg: Virginia Polytechnic Institute and State University, Division of Vocational & Technical Education.

Evans, R. N. (1988). *The history of NAITTE.* Bloomington, IL: National Association of Industrial and Technical Teacher Educators Press.

Evans, R. N., & Herr, E. L. (1978). *Foundations of vocational education.* Columbus, OH: Charles E. Merrill Publishing Co.

Fields, C. M. (1988). Poor test scores bar many minority students from teacher training. *The Chronicle of Higher Education, 35*(10), 1, 32.

Gage, N. L. (1984). What do we know about teaching effectiveness? *Phi Delta Kappan, 66*(2), 87-93.

Hawley, W. D., Austin, A. E., & Goldman, E. S. (1988). *Changing the education of teachers.* Atlanta, GA: Southern Regional Education Board.

Holmes Group, Inc. (1986). *Tomorrow's teachers: A report of the Holmes Group.* East Lansing, MI: Author.

Imig, D. G. (1987). On the knowledge base for beginning teachers. *AACTE Briefs, 8*(9-10), 3.

Jones, D. W. (1988). Assessing the knowledge base in teacher education: A fundamental and necessary task. *Teacher Education Quarterly, 15*(2), 21-31.

Kelly, M. E. (1988, April). *Published vocational education research: Past, present, and future.* Paper presented at the annual meeting of the American Education Research Association, New Orleans, LA.

Lanier, J. L., & Little, J. W. (1986). Research on teacher education. In M. C. Wittrock (Ed.), *Handbook of Research on Teaching* (pp. 527-569). New York: MacMillan Press.

Letherman, C. (1988). Reforms in education of schoolteachers face tough new challenges. *The Chronicle of Higher Education, 34*(32), 1, 30.

Lynch, R. L. (1986). Recruitment and retention of vocational education teachers. In *Achieving excellence in vocational teacher education* (U. S. Department of Education Contract #500-85-137, pp. 1-46). New York: Institute for Research and Development in Occupational Education, City University of New York.

Lynch, R. L. (1988a). Influencing vocational teacher education policy through research. In University Council for Vocational Education (Ed.), *Beyond the debate: Perspectives on the preparation of vocational education teachers*. Macomb, IL: Curriculum Publications Clearinghouse.

Lynch, R. L. (1988b). Vocational teacher education: A research agenda. In M. B. Griggs, R. Jones, & A. Slocum (Eds.), *Vocational teacher education and the Holmes Group*. Champaign: University of Illinois.

Lynch, R. L., Finch, C. R., Laporte, J. E., & Stewart, D. L. (1987, May). *Vocational teacher education task force report*. Unpublished manuscript. Blacksburg: Virginia Polytechnic Institute & State University, Division of Vocational and Technical Education.

McKibben, M. D. (1988). Alternative teacher certification programs. *Educational Leadership, 46*(3), 32-35.

Miller, A. J. (1982). Certification: A question of validity. *Vocational Education Journal, 57*(2), 27-29.

Melnick, S. L., & Pullin, D. (1988). Implications of the use of teacher competency tests. *The Education Digest, 1*, 10-13.

Milanovich, N. J. (1986). Vocational-technical teacher certification—where are we? And where are we going? In *Achieving excellence in vocational teacher education* (U.S. Department of Education Contract #500-85-137). New York: Institute for Research and Development in Occupational Education, City University of New York.

Pratzner, F. C. (1987). *Vocational teacher education: A survey of preservice and inservice preparation*. Columbus: National Center for Research in Vocational Education, Ohio State University.

Pratzner, F. C. (1988). Vocational teacher education and the Holmes Group: Selected highlights from a survey of preservice and inservice preparation. In M. B. Griggs, R. Jones, & A. Slocum (Eds.), *Vocational teacher education and the Holmes Group*. Champaign: University of Illinois, Department of Vocational Education.

Sandefur, J. T. (1986). State assessment trends. *AACTE Briefs*, *7*(6), 12-14.

Schultz, J. L. (1988, April). *Published vocational education research: Past, present, and future*. Paper presented at the annual meeting of the American Education Research Association, New Orleans, LA.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, *57*(1), 1-22.

Southern Regional Education Board. (1986). Serious shortage of science and mathematics teachers: What SREB states are doing. *Regional Spotlight*, *15*(2), 1-8.

Struck, J. W. (1986). *State requirements for offering specific vocational education programs by states; final report.* Washington, DC: National Center for Educational Statistics, U.S. Department of Education.

Sykes, G. (1983). Contradictions, ironies, and promises unfulfilled: A contemporary account of the station of teaching. *Phi Delta Kappan*, *65*(2), 87-93.

Wirt, J. G., Muraskin, L. D., Goodwin, D. A., & Meyer, R. H. (1989). *Final report, summary of findings and recommendations, Volume I.* Washington, DC: National Assessment of Vocational Education, U.S. Department of Education.